NASA Contractor Report 177577

Hypersonic Shock/Boundary-Layer Interaction Database

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Prepared for
Ames Research Center
CONTRACT NAG2-565
April 1991

National Aeronautics and
Space Administration

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Introduction

In modern hypersonic projects such as the National Aerospace Plane (NASP), it has been recognized from the outset that Computational Fluid Dynamics (CFD) must play a major role. Indeed, the future of high-speed air and space transportation depends critically on our ability to predict solutions of those aerothermal problems which are too difficult or expensive to test in ground-based simulation facilities. Great strides have recently been made in the ability of CFD methods to do this, but it is clear that we still have a long way to go.

While not the only problem obstructing further advances in CFD, turbulence modeling is generally recognized to be the major one. A closed solution of the governing Navier-Stokes equations for turbulent flows of practical consequence is still far beyond our grasp. At the same time, the simplified models of turbulence which are used to achieve closure of the Navier-Stokes equations are known to be rigorously incorrect. While these models serve a definite purpose, they are inadequate for the general prediction of hypersonic viscous/inviscid interactions, mixing problems, transition, chemical nonequilibria, and a range of other phenomena which we must be able to predict in order to design a hypersonic vehicle computationally. For this reason turbulence modeling is a key issue in NASA's continued efforts to push forward the boundaries of knowledge of high-speed flight.

Due to the complexity of turbulence, useful new turbulence models are synthesized only when great expertise is brought to bear and considerable intellectual energy is expended. Although this process is fundamentally theoretical, crucial guidance may be gained from carefully-executed basic experiments. Following the birth of a new model, its testing and validation once again demand comparisons with data of unimpeachable quality. This report concerns these issues which arise from the experimental aspect of hypersonic turbulence modeling.

Prior to about 1970, hypersonics was a subject of considerable research in the USA and abroad. However, for a variety of social, economic, and political reasons, such research all but ceased in the USA for 15 years. This "gap" in hypersonic technology now hampers the NASP program and all other modern efforts related to hypersonic flight.

Further, during the "hypersonic gap" years, computer and laser technologies relevant to fluid-dynamic instrumentation matured considerably. Given these improvements, it is now possible to carry out far more meaningful and detailed hypersonic experiments than those of the pre-1970 period. Such efforts have begun, albeit slowly due to the difficulty of re-invigorating a line of experimental research which has lain dormant for 15 years. Thus, at the time of this writing, hypersonics suffers the following duality: "classical" hypersonics, including hypersonic flow theory and old-style data, and "modern" hypersonics, which is almost entirely computational.

With this background, a High-Speed Turbulence Modeling Workshop was held at NASA-Ames Research Center during June 7-8, 1988. This workshop had the goal of identifying ways to improve turbulence modeling for hypersonic flows, with specific applicability to the NASP Program. Both theoretical and experimental issues were discussed in detail.

In the course of this discussion, questions arose about the quantity and quality of *existing* experimental data which bear upon the issue of hypersonic turbulence modeling. Specifically, it was pointed out that existing surveys of high-speed flows (*eg* Ref. 1) list several hundred experiments which have been carried out at hypersonic speeds. However, some attendees of the Workshop questioned whether or not any significant number of these existing experiments could meet the high standards necessary for CFD code validation.

Since this issue could not be resolved straightforwardly at the time, one of the conclusions of the Workshop was that the need existed to review critically the database of existing hypersonic experiments for its suitability to turbulence modeling and code validation. Accordingly, an effort was begun early in 1989 at the Penn State University Gas Dynamics Laboratory to perform this critical review and to assemble the required database. The effort was sponsored by the NASP Program through NASA-Ames Research Center, and is a part of an ongoing overall task to develop compressible urbulence models. This report represents the result of the first phase of that effort.

Database Subject Areas

In choosing the specific subject areas for this hypersonic database collection and assessment effort, some caution was exercised in favor of a few critical issues directly relevant to turbulence modeling. Our purpose in this effort is to define a database for the specific goal of the advancement of modern turbulence models, not to conduct a broad-based survey of all previous work in the field of hypersonics.

Accordingly, discussions with NASA personnel have led to the following list of specific topics for the database:

1) shock wave/boundary-layer interactions
2) supersonic shear layer mixing
3) high-speed attached boundary layers with pressure gradients

The first-year database collection and assessment effort has considered only topic 1) above. A brief justification of this choice follows.

Shock/boundary layer interactions are recognized as the premier pacing issue of modern CFD and turbulence modeling for high-speed flows. The reasons for this lie in the prevalence of shock/boundary layer interaction problems in both external and internal practical aerodynamics and the fundamental difficulty of such problems. For a practical example, the interaction of shock waves with boundary layers underlies the efficiency (if not the viability) of all high-speed inlets for airbreathing propulsion. For a basic example, note that these flows embody mixed hyperbolic and elliptic flow domains with boundaries not known a priori, and that the problem of turbulent boundary-layer separation (not even solved in incompressible flow) is included in shock/boundary layer interactions. For these reasons, the most advanced CFD codes have traditionally been tested against such interactions, though very little has been done so far to test CFD methods or validate codes against hypersonic shock/boundary layer interactions.

Specifically, the coverage of the present database collection and assessment effort with respect to shock/boundary layer interactions includes both supersonic ($M \sim 3$

and above) and hypersonic data, both two-dimensional (2-D) and three-dimensional (3-D) data, and both unseparated and separated turbulent boundary layer cases (though the emphasis is on the latter). Consideration also includes not only perfect-gas behavior, but real gases and (where appropriate) chemically-reacting flows as well. It is recognized, however, that very little data of the latter two types exist within the chosen subject area.

Database Collection

Our philosophy of collecting the necessary data for this study hinges around the following four strategies:

1) Take full advantage of pre-existing database reviews, surveys, and compilations.
2) Conduct machine searches to identify likely candidate studies cited in the literature.
3) Make use of NASA, NTIS, DTIC, AIAA, and other technical library resources to obtain data reports as necessary.
4) Contact investigators, both former and current, as necessary to obtain sufficient documentation of prime candidate studies.

During the initial phase of this effort we have studied a variety of prior reviews and surveys on shock/boundary-layer interactions and related subjects (eg Refs. 1-19). The library holdings of the Penn State Gas Dynamics Laboratory, which has a long-term research effort on this topic, were also thoroughly reviewed. However, the major data collection effort took the form of computerized literature searches.

We have searched the AIAA Aerospace Database, which comprises file 108 of the Dialog computerized database system. The Aerospace Database covers publications and reports since 1962 on aerospace-related subjects, and includes both International Aerospace Abstracts, compiled by the AIAA, and Scientific and Technical Aerospace Reports, compiled by NASA. Considering the strong aerospace flavor of the present subject matter, it was felt that this database was an obvious choice and that searches of other science and engineering databases would be unlikely to turn up significant additional material of relevance.

Before beginning this search process, the NASA Thesaurus (Ref. 20) was consulted for appropriate keywords. A group of obvious references to be included in the database were called up from the Aerospace Database to determine which keywords were used. As it happens, there is no single keyword entry in use for "shock wave/boundary-layer interaction." Instead, the keywords SHOCK WAVE INTERACTION and INTERACTIONAL AERODYNAMICS are most prevalent. At the time the search was conducted, the Aerospace Database contained 3,379 references ("Set 1") indexed by one or the other of these two keyword phrases. Examination of a random sampling of these revealed a low percentage of useful entries for present purposes.

Our next step was to search for citations with one or more of the keywords BOUNDARY LAYER, TURBULENT BOUNDARY LAYER, SUPERSONIC BOUNDARY LAYER, or HYPERSONIC BOUNDARY LAYER. This subset ("Set 2") of the Aerospace Database contained 27,122 citations. The intersection of Sets 1 and 2 (998 citations) is thus the set ("Set 3") described as "shock wave/boundary-layer interactions," at least insofar as keyword descriptors are concerned. However, examination of a random sampling from Set 3 still revealed inappropriate citations for present purposes. It seems that the combination of keywords used so far is necessary but not sufficient to fully characterize the literature citations which we sought.

We next decided to narrow the range of consideration still further by requiring that, in addition to the above keywords, descriptors related to shock/boundary-layer interactions must also appear in the title or abstract of the citation. A long list of such possible descriptors was compiled and linked by Boolean "or" terms, such that the presence of any one of them would produce a "hit." Upon searching titles and abstracts of the Aerospace Database for this list, a set ("Set 4") of 815 citations was found. The intersection of Sets 3 and 4 resulted in 436 citations ("Set 5").

Examination of a random sampling of citations from Set 5 now revealed a high incidence of what appeared to be pertinent references. One final step was taken to narrow this list still further by excluding those citations in which the keywords LAMINAR, TRANSONIC, and COMPUTATIONAL FLUID DYNAMICS appeared. This was done because these three descriptors typically characterize studies which are not pertinent for present purposes. The result of this operation on Set 5 was Set 6, containing 279 citations.

Every citation in Set 6 was scanned by abstract in order to determine its relevance. This process depended heavily on our background and experience in shock/boundary-layer interaction research in order to identify likely candidate experiments. In all cases for which a decision could not be reached from the abstract alone, a hard copy of the full document was obtained and scanned. The result of this process was the final set ("Set 7"), which consisted of 105 distinct experimental studies of shock wave interactions with turbulent boundary layers at Mach numbers of 3 or higher. Set 7 was subjected to the database assessment procedure described below.

Database Assessment

This was the critical step of the study, in which the decision was made as to which of the possible candidate experiments identified above actually merit inclusion in a database to be put forth as a standard for CFD code validation and turbulence model development. Our philosophy at this stage was that we were looking only for those few experimental studies of unimpeachable quality and direct pertinence to the subject at hand. It would be a mistake to give benefit of doubt in such an assessment if that doubt might cause future turbulence modeling efforts to be misled. Also, we drew guidance from a distinguished predecessor at this task (Ref. 21), who noted that those data turn out to be most useful in which only one factor is varied at a time, and that there appears to be a certain level above which measurements can be described as being of "professional quality."

We have subjected the 105 candidate studies of Set 7 above to a test based on rigorous criteria for this purpose. The criteria are grouped in two categories: "necessary" and "desirable." Candidate experiments were required to pass all the "necessary" criteria in order to be considered further. However, even then, failure to meet any of the "desirable" criteria might result in rejection of a candidate experiment for the database, on the basis that it fails to contribute anything truly useful to the goal of the database.

It is recognized, considering that many of the candidate studies are 15 years old or older, that the rigorous application of modern code validation criteria would eliminate most or all of them. Accordingly, a second category was created to include "qualified" experiments, *ie*, the best of those which do not meet all the necessary criteria but still retain some value for code validation and turbulence modeling.

Our list of the 8 necessary criteria we applied is given below, in the hierarchical order in which they were applied.

1) BASELINE APPLICABILITY

All candidate studies must be experiments involving turbulent flows in either of the supersonic or hypersonic Mach number ranges (ie M $\sim$ 3 or higher). Further, these studies must address the subject area of shock wave/boundary-layer interactions.

2) SIMPLICITY

All candidate studies passing this criterion must involve experimental geometries sufficiently simple that they may be modeled by CFD methods without enormous difficulty. Flows through complex inlet scale-models or over the surfaces of complete 3-D flight configurations are rejected at this point, for example. Stated in other words, this criterion is a filter which passes only "building-block" experiments.

3) SPECIFIC APPLICABILITY

All candidate studies passing this criterion must be capable of providing some useful test of turbulence modeling. For example, any study which provides only a surface pressure distribution over an arbitrary surface in hypersonic flow is rejected as insufficient to further the goals of turbulence modeling. To be a useful test case, such a study would at least require additional data such as flowfield profiles or heat transfer/skin friction distributions. (Some experienced judgement was called for in the application of this criterion.)

4) WELL-DEFINED EXPERIMENTAL BOUNDARY CONDITIONS

This criterion was applied in a sense similar to that of CFD studies, where a rational solution cannot be had if the boundary conditions of the problem are inadequately defined. For high-speed experiments, this criterion requires at least that all incoming conditions (especially the state of the incoming boundary-layer) be carefully documented. For turbulent incoming boundary-layers, either known upstream transition conditions (to allow a boundary-layer calculation to be made) or else the documentation of both the mean and fluctuating character of the incoming profile must be provided. Similarly, all studies claiming "2-D" flow must show data which establish the extent of spanwise flow variations.

We recognized at the outset that this criterion alone might eliminate a large proportion of all past hypersonic studies from further consideration. However, without it, the resulting database would fail to be useful for its intended purpose.

5) WELL-DEFINED EXPERIMENTAL ERROR BOUNDS

To pass this criterion, the experimenter him/her/self must have provided an analysis of the accuracy and repeatability of the data, or error bands on the data themselves. Further, such accuracy indications or error bounds must be substantiated in some rational way beyond their mere statement. (Without this criterion, a proper code validation exercise cannot be conducted with the subject data.)

6) CONSISTENCY CRITERION

If, during the consideration of a candidate study, mutually inconsistent results are discovered, said study was eliminated from further consideration for the database. This criterion amounts to a special corollary of the previous criterion.

7) ADEQUATE DOCUMENTATION OF DATA

Candidate studies were examined to determine whether or not their data are documented sufficiently to allow quantitative results to be included in the database in tabulated and machine-readable form. Those failing this criterion were eliminated. This criterion applied in particular to studies whose documentation was available only in plotted form. If such plots were quantitatively unreadable within reasonable error bounds as mentioned above (taking note of the well-known scale distortions which often occur during publication), then the data cannot be considered useful for the stated purpose of the database. (Coles, Ref. 21, read data from plots in only two cases; we have not done so at all in the present study.)

8) ADEQUATE SPATIAL RESOLUTION OF DATA

To pass this criterion, experiments must present data of sufficiently high resolution, compared with the scale of the flow in question, that the key features of the flow are clearly resolved. Failure to do so results in data which are inadequate to provide a proper example or test for turbulence modeling.

In addition to the above-listed "necessary" criteria, the following "desirable" criteria also had an influence on which candidate experiments were finally included in the database:

1) TURBULENCE DATA

In addition to purely mean-flow measurements, data on fluctuating quantities such as Reynolds stresses and velocity or mass-flux fluctuations were considered highly desirable.

2) REALISTIC TEST CONDITIONS

Of those flows passing the necessary criteria, special preference was given to cases with Mach numbers in the hypersonic range, non-adiabatic wall conditions, real-gas effects, or related characteristics typical of actual hypersonic flight.

3) NON-INTRUSIVE INSTRUMENTATION

All other conditions being equal, preference was given to experiments wherein non-intrusive instrumentatation (*eg* optical measurements) were employed to acquire the data. This preference is based on the automatic satisfaction of related error and boundary-condition concerns which occurs when non-intrusive measurements are made.

4) REDUNDANT MEASUREMENTS

Further preference was given to experiments in which redundant data were taken in order to establish the values of flow quantities by more than one method. This is considered to be a strong demonstration of the quality and error bounds of the data.

5) FLOW STRUCTURE AND PHYSICS

Finally, preference was also given to those experiments which, in addition to quantitative data, also reveal flow structures and physical mechanisms. The philosophy of this criterion was to allow higher-level CFD comparisons with the salient characteristics of the flows in question, rather than merely with unstructured flow profiles.

The 105 individual studies subjected to the above criteria are listed by bibliographic citation in Appendix A. Each of these studies was given a detailed assessment through examination of its source material. During the evaluation procedure a tabular evaluation matrix was kept of decisions in each assessment category for every studied considered. A form of this table is given as Appendix B. Other than an indication of whether or not each candidate met the criteria indicated, additional notes pertinent to the assessment are provided in some cases.

Results and Conclusions

As shown in the evaluation tables of Appendix B, only a few of the "finalists" in Database Collection Set 7 passed a sufficient number of the assessment criteria to be accepted into the database. Of these, we observed the trend that far more acceptable studies fell in the supersonic Mach number range (Mach 3 to 5) than in the hypersonic range (above Mach 5). We have therefore split the Category I (accepted) studies into groups A (hypersonic) and B (supersonic).

Since the above result became clear early in the assessment phase, somewhat tougher standards were applied to supersonic than to hypersonic studies. Along the same lines, the paucity of true hypersonic data resulted in all such studies being accepted which at least met the 8 "necessary" criteria. In other words, we were in no position to be "choosy" where category IA was concerned.

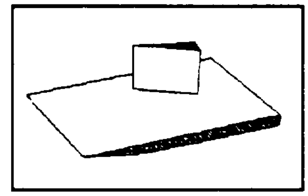
The studies accepted in categories IA and IB are listed in the Tables below and tabulated data for each of them are included in Appendix C. Category II (limited acceptance) status was also extended to the axisymmetric cylinder-flare experiment of Coleman (Database References 16 and 17) and the 2-D compression corner data of Holden (Database References 41 and 42). These data have some value for code validation and turbulence modeling even though incoming boundary-layer conditions were not reported. However, we have made no attempt to tabulate data for these Category II studies.

A single *general* conclusion may be drawn from this study: high-quality data on hypersonic shock/boundary-layer interactions, suitable for use in turbulence modeling efforts, are *extremely scarce*. The existing data do not begin to satisfy the current need. Thus the authors strongly suggest that new, detailed, carefully-planned experiments be funded and carried out. Suggestions for these experiments are listed in the next section. In particular, no useful real-gas data were found in the current database assessment.

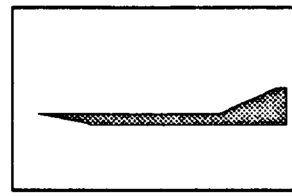
Finally, only one accepted dataset in Category I qualifies as a "new discovery" in the sense that it was not previously available in some form, *ie*, the supersonic compression-corner data of Zheltovodov *et al.* The availability of these detailed data from the USSR is a sign of recently-renewed cooperation between US and Soviet researchers in the field of hypersonics.

Category IA: Accepted Experiments, Hypersonic

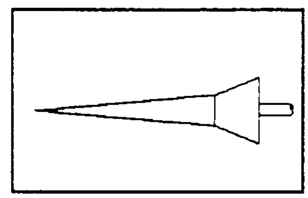
Ref.: 56, 15
Author: Law, C. H.
Geometry: 3-D Fin
Mach number: 6
Data: p_{wall}, c_h



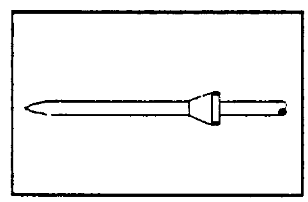
Ref.: 16, 17
Author: Coleman, G. T.
Geometry: 2-D Compression Corner
Mach number: 9
Data: p_{wall}, c_h



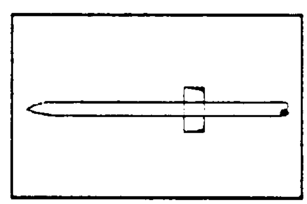
Ref.: 40, 39
Author: Holden, M. S.
Geometry: Axisymmetric Cone-Flare
Mach number: 11, 13
Data: p_{wall}, c_h



Ref.: 51
Author: Kussoy, M. I., *et al*
Geometry: Axisymmetric Ogive-Cylinder-Flare
Mach number: 7
Data: p_{wall}, c_h, flowfield surveys

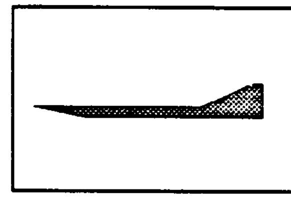


Ref.: 53
Author: Kussoy, M. I., *et al*
Geometry: Axisymmetric Impinging Shock
Mach number: 7
Data: p_{wall}, c_h, c_f, flowfield surveys

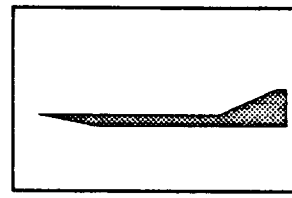


Category IB: Accepted Experiments, Supersonic

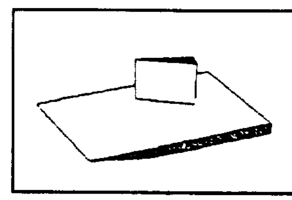
Ref.: 88, 29
Author: Smits, A. J., *et al*
Geometry: 2-D Compression Corner
Mach number: 3
Data: p_{wall}, c_f, mean & fluctuating flowfield surveys (pitot and hot-wire anemometry)



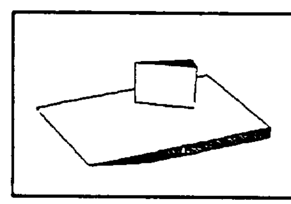
Ref.: 103, private communication
Author: Zheltovodov, A. A., *et al*
Geometry: 2-D Compression Corner
Mach number: 3
Data: p_{wall}, c_h, mean and fluctuating flowfield surveys (pitot and hot-wire anemometry)



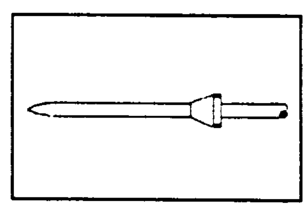
Ref.: 49
Author: Bogdonoff, S. M., *et al*
Geometry: 3-D Fin
Mach number: 3
Data: p_{wall}, mean flowfield surveys ("cobra" probe)



Ref.: 46
Author: Kim, K-S, *et al*
Geometry: 3-D Fin
Mach number: 3, 4
Data: p_{wall}, c_f, surface-flow angles

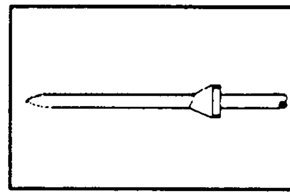


Ref.: 13, 27
Author: Dunagan, S. E., Brown, J. L., *et al*
Geometry: Axisymmetric Ogive-Cylinder-Flare
Mach number: 3
Data: p_{wall}, flowfield surveys (LDV and holographic interferometry)

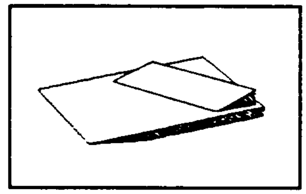


Category IB: Accepted Experiments, Supersonic (Concluded)

Ref.: 12
Author: Brown, J. D., *et al*
Geometry: Axisymmetric Ogive-Cylinder with Skewed Flare
Mach number: 3
Data: p_{wall}, flowfield surveys (LDV)



Ref.: 85
Author: McKenzie, T. M., *et al*
Geometry: 3-D Swept Compression Corner
Mach number: 3
Data: p_{wall}, mean flowfield surveys ("cobra" probe)



Need for Further Experimentation

Based upon the results of this study, the following list conveys our recommendations for further experimentation in hypersonic shock/boundary-layer interactions.

1) Interactions involving real-gas effects
2) Flowfield turbulence data
3) One or more high-quality hypersonic *laminar* boundary-layer experiments for comparison purposes
4) Non-intrusive flowfield data (mean as well as fluctuating)
5) More complex types of "building-block" interactions, such as the double-fin or crossing-shock-type interaction
6) Emphasis on 3-D rather than 2-D interactions

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Appendix B: Database Assessment

The following Table lists the 105 Database References which were subjected to an evaluation based on the criteria described earlier in the Database Assessment section. The Reference number given in the first column corresponds to the list of numbered Database References in Appendix A. The Table includes a brief annotation of test geometry and Mach number for each entry, followed by an evaluation field for each of 7 necessary and 5 desirable criteria as discussed earlier. Note that, by definition, each of the 105 evaluated studies met the first necessary criterion of baseline applicability. The remaining twelve criteria are indicated in the table only by numbers, the meaning of which is as follows:

NECESSARY CRITERIA

- #2 Simplicity
- #3 Specific Applicability
- #4 Well-Defined Experimental Boundary Conditions
- #5 Well-Defined Experimental Error Bounds
- #6 Consistency Criterion
- #7 Adequate Documentation of Data
- #8 Adequate Spatial Resolution of Data

DESIRABLE CRITERIA

- #1 Turbulence Data
- #2 Realistic Test Conditions
- #3 Non-Intrusive Instrumentation
- #4 Redundant Measurements
- #5 Flow Structure and Physics

Each of these evaluation fields contains one of three symbols:

- ✓ Acceptable
- X Not Acceptable
- ? No Determination Made

The question-mark symbol indicates that the necessary information to evaluate that category was lacking. In some cases, question marks or blanks in one or more evaluation fields also may indicate that the evaluation was terminated after the candidate study failed one or more of the "necessary" criteria. Finally, a "comments" field provides additional information on the candidate study and its evaluation.

The abbreviations used in the TEST GEOMETRY Field of the Table are as follows:

Axi.	axisymmetric
CC	compression corner
Cyl	cylinder
FF	forward-facing
IS	incident shock wave
LE	leading edge
SC	semicone or half-cone
SCC	swept compression corner
2-D	two-dimensional
3-D	three-dimensional
α	angle of attack

			NECESSARY CRITERIA							DESIRABLE CRITERIA					
REF NO	MACH NO.	TEST GEOMETRY	#2	#3	#4	#5	#6	#7	#8	#1	#2	#3	#4	#5	ACCEPT?
1	3	2-D CC	✓	X	✓	?	✓	X	✓	X	X	✓	X	X	X
	Wall-pressure fluctuation data only														
2	12	2-D CC	✓	✓	X	X	✓	?	✓	X	✓	✓	X	X	X
	No incoming boundary-layer profile; boundary-layer heavily tripped														
3	15	2-D CC	✓	✓							✓	✓		X	X
	Same comments as above														
4	5	Blunt LE	✓	X	✓	?	✓	✓	✓	X	✓	✓	X	X	X
	Wall-pressure fluctuation data only														
5	3.5	2-D IS	✓	✓	✓	?	?	?	✓	X		X	X	✓	X
	Non-uniform conical nozzle flow; strange incoming boundary-layer														
6	3.7	Axi. Duct	✓	✓	X	X	✓	X	✓	X	X	✓	X	X	X
	Boundary conditions of flow not well-defined														
7	3	3-D Sharp Fin	✓	?	✓	?	?	✓	✓	X	X	X	X	✓	X
	Unseparated interaction, possibly too weak to be a useful test of turbulence modeling														
8	3	3-D Sharp Fin	✓	X	✓	?	?	✓	✓	X	X	X	X	X	X
	Surface data only														
9	3	Fin, SC, SCC	✓	✓	✓	?	✓	X	✓	X	X	X	X	✓	X
	Flowfield surveys of similar intns. due to different shock generators; data not avail.														
10	3	3-D Sharp Fin	✓	✓	✓	✓	✓	✓	✓	X	X	X	X	✓	✓
	Secondary reference for Princeton Mach 3 α = 20° fin interaction (see Ref. 49)														

			NECESSARY CRITERIA							DESIRABLE CRITERIA					
REF NO	MACH NO.	TEST GEOMETRY	#2	#3	#4	#5	#6	#7	#8	#1	#2	#3	#4	#5	ACCEPT?
11	3	3-D Flare	✓	✓	✓	✓	?	✓	✓	?	X	✓	X	X	X
	Turbulence and shock-motion effects could not be separated														
12	3	3-D Flare	✓	✓	✓	✓	✓	✓	✓	✓	X	✓	✓	✓	✓
	Primary reference for NASA-Ames Mach 3 skewed flare interaction														
13	3	Axi. Flare	✓	✓	✓	✓	✓	✓	✓	✓	X	✓	✓	✓	✓
	Primary reference for NASA-Ames Mach 3 axisymmetric flare interaction (LDV)														
14	4	Cone at α in Axi. Channel	✓	?	X	X	?	X	✓	X	X	X	X	✓	X
	The level of this experiment is not up to current code-validation standards														
15	5.85	3-D Sharp Fin	✓	✓	✓	✓	✓	✓	✓	X	X	X	X	X	✓
	Secondary reference for ARL/AFFDL Mach 6 fin interaction (see Ref. 56)														
16	9	2-D CC, Axi. Cyl/Flare	✓	✓	✓	✓	✓	✓	✓	X	✓	X	X	X	✓
	No incoming boundary-layer profile for the Axi Cyl/Flare.														
17	9	2-D CC	✓	✓	✓	✓	✓	✓	✓	X	✓	X	X	X	✓
	Primary reference for Coleman/Stollery 2-D CC; could have 3-D flow @ largest CC angles														
18	5, 6.5, 9.8	Axi. IS, 3-D Fin	✓	✓	X	X	X	X	?	X	✓	✓	X	X	X
	The level of this experiment is not up to current code-validation standards														
19	5, 5.5, 6	3-D Sharp & Blunt Fin	✓	✓	X	X	?	✓	✓	X	X	X	X	X	X
	No incoming boundary-layer profile														
20	5	3-D Blunt LE	✓	X	✓	?	✓	✓	✓	X	X	X	X	X	X
	Wall-pressure fluctuation data only														

			NECESSARY CRITERIA							DESIRABLE CRITERIA					
REF NO	MACH NO.	TEST GEOMETRY	#2	#3	#4	#5	#6	#7	#8	#1	#2	#3	#4	#5	ACCEPT?
21	4.9	3-D Blunt Fin	✓	X	✓	?	?	✓	✓	X	X	X	X	X	X
	Upstream-influence data only														
22	3	3-D Blunt Fin	✓	X	✓	?	✓	✓	✓	X	X	X	X	X	X
	Wall-pressure data only														
23	3	3-D Blunt Fin	✓	X	✓	?	✓	✓	✓	X	X	X	X	X	X
	Fluctuating wall-pressure data only														
24	3	3-D Blunt Fin	✓	X	✓	?	✓	✓	✓	X	X	X	X	X	X
	Mean surface-pressure distributions only														
25	3	3-D Blunt Fin	✓	X	✓	✓	✓	✓	✓	X	X	X	X	X	X
	Wall-pressure distributions only														
26	3	3-D Blunt Fin	✓	X	✓	✓	✓	✓	✓	X	X	X	X	X	X
	Wall-pressure distributions only														
27	3	Axi Flare	✓	✓	✓	✓	✓	✓	✓	X	X	✓	✓	✓	✓
	Interferometric density data supplementing LDV data on same geometry (see Ref. 13)														
28	7-9	2D CC	✓	✓	✓	?	✓	✓	✓	X	✓	✓	X	X	✓
	Secondary ref. for Coleman data (see Ref. 16)														
29	3	2D CC	✓	✓	✓	✓	✓	✓	✓	✓	X	X	✓	✓	✓
	Primary reference for Princeton 2-D CC hot-wire data (see also Ref. 84)														
30	2-4	Axi. Flare	✓	✓	✓	?	?	X	✓	X	X	X	X	✓	X
	Data not available														
31	2-6	2-D CC	✓	✓	?	X	?	X	✓	X	✓	X	X	X	X
	Data not available														

			NECESSARY CRITERIA							DESIRABLE CRITERIA					
REF NO	MACH NO.	TEST GEOMETRY	#2	#3	#4	#5	#6	#7	#8	#1	#2	#3	#4	#5	ACCEPT?
32	3	3-D Sharp Fin	✓	✓	✓	✓	✓	✓	✓	X	X	X	X	X	✓
	Supplementary wall-pressure data for Princeton Mach 3 Fin (see Ref. 49)														
33	5	Blunt Cyl 3-D	✓	X	✓	?	✓	✓	✓	X	X	X	X	X	X
	Fluctuating wall-pressure data only														
34	6, 8, 10	2-D IS	✓	✓	X	X	X	?	✓	X	X	X	X	X	X
	The level of this experiment is not up to current code-validation standards														
35	4	2-D IS	✓	✓	X	X	?	X	✓	X	X	✓	X	X	X
	Boundary-layer not defined; evidence of transitional boundary-layer														
36	4	2-D IS	✓	✓	X	X	?	X	✓	X	X	✓	X	X	X
	Wall-pressure fluctuation data only; see comments above														
37	4	2-D IS	✓	✓	X	X	?	X	✓	X	X	✓	X	X	X
	See comments for Ref. 35														
38	11, 13	Axisymmetric Cone/Flare	✓	✓	✓	✓	✓	✓	✓	X	✓	✓	X	X	✓
	Supplementary reference to Ref. 40 below														
39	11, 13	Axisymmetric Cone/Flare	✓	✓	✓	✓	✓	✓	✓	X	✓	✓	X	X	✓
	Supplementary reference to Ref. 40 below														
40	11	Axi Cone/Flare; 3-D Fin, IS	✓	✓	✓	✓	✓	✓	✓	X	✓	X	X	X	✓
	Primary ref. for Holden Axisymmetric Cone/Flare.														
41	8	2-D CC IS	✓	✓	?	X	X	✓	✓	X	✓	X	X	X	X
	IS model dimensions not defined; boundary-layer not defined.														
42	6-15	2-D CC IS	✓	✓	?	X	X	✓	✓	X	✓	X	X	X	X
	IS model dimensions not defined; boundary-layer not defined.														

			NECESSARY CRITERIA							DESIRABLE CRITERIA					
REF NO	MACH NO.	TEST GEOMETRY	#2	#3	#4	#5	#6	#7	#8	#1	#2	#3	#4	#5	ACCEPT?
43	6	2-D CC, FF Step	✓	✓	X	X	?	?	✓	X	X	X	X	X	X
	Incoming boundary-layer not defined														
44	7-11	2-D CC, etc.	✓	X											X
	No new data														
45	3	2-D CC	✓	X	✓	✓	✓	✓	✓	X	X	X	X	X	X
	Upstream-influence and wall-pressure data only														
46	3, 4	3-D Sharp Fin	✓	✓	✓	✓	✓	✓	✓	X	X	✓	X	X	✓
	Features non-intrusive optical skin friction data														
47	3	SCC, 3-D Sharp Fin, SC	✓	✓	✓	✓	✓	X	✓	X	X	X	X	✓	X
	Data not available														
48	3	SCC	✓	✓	✓	✓	✓	✓	✓	X	X	X	X	✓	✓
	Secondary ref. for Princeton Mach 3 - 24-40 SCC														
49	3	3-D Sharp Fin	✓	✓	✓	✓	✓	✓	✓	X	X	X	X	✓	✓
	Primary ref. for Princeton Mach 3 $\alpha = 20°$ fin (see Ref. 10)														
50	3	2-D CC	✓	✓	?	?	?	✓	✓	✓	X	✓	X	✓	X
	Definition of boundary conditions not clear; LDA data may be inconsistent														
51	7	2-D Flare	✓	✓	✓	✓	✓	✓	✓	X	✓	X	✓	✓	✓
	Features flowfield data and redundant surface data														
52	2.9	3-D Flare	✓	✓	✓	✓	✓	✓	✓	✓	X	✓	✓	✓	✓
	Secondary reference for NASA-Ames skewed flare experiment (see Ref. 12)														
53	7.2	Axi IS	✓	✓	✓	✓	✓	✓	✓	X	✓	X	X	✓	✓
	Includes both flowfield and surface data														

			NECESSARY CRITERIA							DESIRABLE CRITERIA					
REF NO	MACH NO.	TEST GEOMETRY	#2	#3	#4	#5	#6	#7	#8	#1	#2	#3	#4	#5	ACCEPT?
54	7.5, 10.5	2-D IS	✓	X	?	X	?	?	X	X	✓	X	X	✓	X
	Boundary-layer possibly transitional; only upstream and downstream surveys taken														
55	3	2-D IS, CC	✓	X	✓	?	✓	✓	✓	X	X	X	X	X	X
	Wall-pressure distributions only														
56	6	3-D Sharp Fin	✓	✓	✓	✓	✓	✓	✓	X	X	X	X	X	✓
	Primary reference for ARL/AFFDL Mach 6 fin interaction (see Ref. 15)														
57	?	Axi Cyl/Flare	X												X
	Geometry too complex; wall-pressure data only														
58	3	3-D Sharp Fin	✓	X	✓	X	✓	✓	✓	X	X	X	X	X	X
	Mainly surface-flow visualization data														
59	3	3-D Sharp Fin	✓	✓	✓	?	✓	✓	✓	X	X	X	X	✓	X
	$\alpha = 10°$ interaction too weak to be useful test of turbulence model														
60	3	3-D Sharp Fin	✓	✓	✓	?	✓	✓	✓	X	X	X	X	✓	X
	$\alpha = 10°$ interaction too weak to be useful test of turbulence model														
61	7.2	Axi IS	✓	✓	✓	?	?	✓	✓	✓	✓	X	X	✓	X
	Consistency and frequency response of "webbed" hot-wires is highly questionable														
62	2.9	2-D IS	X	✓	✓	?	✓	✓	✓	✓	X	✓	✓	✓	X
	Flowfield not actually 2-D, and not simple														
63	2.9	2-D CC	✓	X	✓	?	✓	✓	✓	X	X	X	X	X	X
	Wall-pressure fluctuation data only														
64	2.9	2-D IS	✓	X	?	?	?	?	✓	X	X	X	X	X	X
	Consistency and accuracy of buried-wire heat transfer data questionable														

			NECESSARY CRITERIA							DESIRABLE CRITERIA					
REF NO	MACH NO.	TEST GEOMETRY	#2	#3	#4	#5	#6	#7	#8	#1	#2	#3	#4	#5	ACCEPT?
65	6, 8, 10	2-D IS 3-D Fin	✓	✓	X	X	✓	✓	✓	X	✓	X	X	X	X
	Summary report only; no new data														
66	3	3-D sharp fin	✓	✓	✓	✓	✓	X	✓	X	X	X	X	✓	X
	Data not available; α = 10° interaction too weak to be useful test														
67	3	3-D sharp fin	✓	✓	✓	✓	✓	X	✓	X	X	X	X	✓	X
	Data not available; α = 10° interaction too weak to be useful test														
68	3	3-D sharp fin	✓	✓	✓	✓	✓	X	✓	X	X	X	X	✓	X
	Data not available; α = 10° interaction too weak to be useful test														
69	2-3	3-D IS	✓	X	?	?	?	X	✓	X	X	X	X	X	X
	Data not available														
70	2-3	3-D IS	✓	X	?	?	?	X	✓	X	X	X	X	X	X
	Data not available														
71	2-3	3-D IS	✓	X	?	?	?	X	✓	X	X	X	X	X	X
	Data not available														
72	3	3-D Sharp Fin	✓	X	?	?	✓	✓	✓	X	X	X	X	X	X
	Report is primarily concerned with facility effects														
73	2-4.3	2-D IS	✓	✓	✓	?	?	✓	✓	X	X	X	X	✓	X
	Level of this experiment is not up to current code-validation standards														
74	5, 6, 7	Axi. Cyl/Flare	✓	X	X	X	?	?	✓	X	X	X	X	X	X
	Level of this experiment is not up to current code-validation standards														
75	2.9	2-D IS	X	✓	✓	?	X	?	✓	X	X	X	X	✓	X
	Actually a 3-D interaction; too complex for a useful test case														

			NECESSARY CRITERIA							DESIRABLE CRITERIA					
REF NO	MACH NO.	TEST GEOMETRY	#2	#3	#4	#5	#6	#7	#8	#1	#2	#3	#4	#5	ACCEPT?
76	2.9	2-D IS	X	✓	✓	?	X	?	✓	X	X	X	X	✓	X
	Actually a 3-D interaction; too complex for a useful test case														
77	2.9	2-D IS	✓	✓	✓	X	✓	X	✓	✓	X	✓	✓	X	X
	The level of this experiment is not up to current code-validation standards														
78	4	Axi. IS	✓	✓	✓	?	X	?	✓	✓	X	X	X	✓	X
	Serious questions have arisen about the accuracy of these hot-wire data														
79	2-4.5	Axi. Cyl/Flare	✓	X	✓	?	✓	?	✓	X	X	X	X	X	X
	Measurements are primarily wall-pressure distributions														
80	2-4	2-D CC	✓	X	✓	?	✓	?	✓	X	X	X	X	X	X
	Measurements are primarily wall-pressure distributions														
81	?	2-D IS	✓					X							X
	Source document and data not available														
82	2-5	2-D IS	✓	X	✓	?	✓	X	✓	X	X	X	X	X	X
	Results suitable for turbulence modeling extremely limited														
83	2.8, 3.8	Cone In Axi. Channel	✓	X	✓	?	?	?	✓	X	X	X	X	X	X
	The level of this experiment is not up to present code-validation standards														
84	3	2-D CC	✓	✓	✓	✓	✓	✓	✓	✓	X	X	X	✓	✓
	Secondary reference for Princeton 2-D CC hot-wire data (see Ref. 29)														
85	3	SCC	✓	✓	✓	✓	✓	✓	✓	X	X	X	X	✓	✓
	Primary Ref. for Princeton Mach 3 - 24 - 40 SCC														
86	3	SCC	✓	X	✓	X	✓	✓	✓	X	X	X	X	X	X
	Surface-pressure and flow visualization data only														

			NECESSARY CRITERIA							DESIRABLE CRITERIA					
REF NO	MACH NO.	TEST GEOMETRY	#2	#3	#4	#5	#6	#7	#8	#1	#2	#3	#4	#5	ACCEPT?
87	3	2-D CC	✓	✓	✓	✓	✓	✓	✓	X	X	X	X	✓	✓
	Report contains mean flowfield data for combination with Refs. 29, 84, and 88														
88	2.9	2-D CC	✓	✓	✓	✓	✓	✓	✓	✓	X	X	X	✓	✓
	Secondary ref. for Princeton 2-D CC experiments (see Ref. 29)														
89	2.9	2-D CC	✓	✓	✓	?	✓	?	✓	X	X	X	X	X	X
	Mainly surface-pressure data														
90	4.8-6.2	2-D CC	✓	X	?	?	?	?	✓	X	X	X	X	X	X
	Primarily surface-pressure data														
91	2, 3, 4	Axi. IS	✓	X	✓	X	?	?	✓	X	X	X	X	✓	X
	The level of this experiment does not appear to be up to current code-validation standards														
92	3	SCC	✓	X	✓	✓	✓	✓	✓	X	X	X	X	X	X
	Primarily surface flow-visualization data														
93	3.7	3-D Sharp Fin	✓	✓	X	✓	?	✓	✓	X	X	X	X	X	X
	No incoming boundary-layer definition														
94	?	IS	X					X							X
	Data not available														
95	3	3-D Sharp Fin	✓	X	✓	?	✓	✓	✓	X	X	X	X	X	X
	Wall-pressure fluctuation data only														
96	3	3-D Sharp Fin	✓	X	✓	?	✓	✓	✓	X	X	X	X	X	X
	Wall-pressure fluctuation data only														
97	?	Blunt LE		X				X							X
	Superceded by more recent work of Dolling et al														

			NECESSARY CRITERIA							DESIRABLE CRITERIA					
REF NO	MACH NO.	TEST GEOMETRY	#2	#3	#4	#5	#6	#7	#8	#1	#2	#3	#4	#5	ACCEPT?
98	7.8	FF Step	✓	✓	X	X	?	X	✓	X	✓	✓	X	X	X
	Insufficient documentation														
99	7-10	2-D IS	✓	X	✓	?	?	?	✓	X	✓	X	X	✓	X
	No flowfield data inside interaction; data not available														
100	7.3, 10.4	2-D IS	✓	X	✓	?	?	?	✓	X	✓	X	X	✓	X
	No flowfield data inside interaction; data not available														
101	8.8, 13.5	Axi. Cone/flare	✓	X	X	X	?	?	✓	X	✓	X	X	X	X
	Incoming boundary-layer not defined														
102	3.7, 6.3	2-D CC	✓	✓	X	X	?	?	✓	X	✓	X	X	X	X
	Incoming boundary-layer not defined														
103	2-4	2-D CC	✓	✓	✓	✓	✓	✓	✓	✓	X	X	X	✓	✓
	Features extensive pitot and hot-wire surveys, heat transfer data														
104	3	3-D Sharp Fin	✓	X	?	?	✓	?	✓	X	X	X	X	✓	X
	Mainly surface and flow-visualization data; data not available														
105	3	3-D Blunt Cyl	✓	X	?	?	?	X	✓	X	X	X	X	✓	X
	Mainly wall-pressure distribution data														

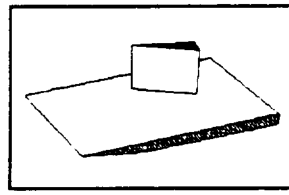
Appendix C: Data Tabulation

There follows a tabulation of pertinent data from the 5 Category IA and 7 Category IB studies which make up the database. For each study a brief discussion of the data is given for the benefit of users of the data. However, users are strongly encouraged to consult the original references for more detail on what was measured and how it was accomplished. Similarly, no attempt has been made to tabulate all available data from each of these studies, but rather only those data most pertinent to the issues of turbulence modeling and code validation. In several cases, additional data may be had from the original publications. A 5.25" double-sided high-density "floppy" disk is also provided in original copies of this report. This disk contains the data-tables of this Appendix in machine-readable ASCII files, formatted for MS-DOS computers. Individual ASCII files are given for each of the 12 Category I datasets with filenames as follows:

Category IA:
- LAW.DAT
- COLEMAN.DAT
- HOLDEN.DAT
- KUSSOY1.DAT
- KUSSOY2.DAT

Category IB:
- SMITS.DAT, SETTLES.DAT
- ZHELT.DAT
- BOGDONOF.DAT
- KIM.DAT
- DUNAGAN.DAT
- BROWN.DAT
- MCKENZIE.DAT

Ref.: 56, 15
Author: Law, C. H.
Geometry: 3-D Fin
Mach number: 6
Data: p_{wall}, c_h



Law, C.H., "3-D Shock Wave-Turbulent Boundary Layer Interactions At Mach 6," *ARL TR 75-0191*, 1974.

Christophel, R.G., Rockwell, W.A. and Neumann, R.D., "Tabulated Mach 6 3-D Shock Wave-Turbulent Boundary Layer Interaction Heat Transfer Data," *AFFDL-TM-74-212-FXG and AFFDL-TM-74-212-FXG-Supplement*, 1975.

The data consist of surface pressures and heat transfer coefficients beneath the swept interaction generated by an oblique shock impinging on a flat-plate turbulent boundary layer. The freestream Mach number was 5.85 for all tests. The coordinate system used is x ≡ streamwise coordinate and y ≡ spanwise coordinate, with origin at the top left corner of the flat plate as viewed from above. Coordinates are given in inches.

Surface data were measured along five spanwise rows in the interaction region. Fin angles-of-attack of 6, 8, 10, 12, 16, and 20 degrees were tested, spanning a broad range of interaction strength. These experiments were done at two distinct values of freestream Reynolds number, 10 and 30 million/foot. Natural transition occurred on the flat plate.

Only the higher-Reynolds number data are tabulated here. Of these, only one spanwise row of data is tabulated, generally corresponding to the last row taken (row 5). Since it is now widely accepted that such interactions are quasi-conical in nature, the other data rows are felt to be redundant. Redundant data in terms of repeated test conditions is also contained in the data reports listed above, but not tabulated here.

This experiment suffers two problems worthy of mention. First, although an acceptable boundary-layer profile was measured, it was obtained at the *end* of the flat plate in the absence of the fin, not near the fin leading-edge position. That boundary-layer profile is tabulated here even though it is not a proper incoming-flow boundary condition. This problem is not believed to be a major one, since a boundary-layer code may be used to match the given profile and then provide interpolated profiles at any location.

Secondly, the thin-skin thermocouple heat transfer technique used here is susceptible to errors due to lateral heat conduction in regions of strong skin-temperature gradient. Such strong gradients did occur for the stronger interactions represented here. No corrections for conduction were made, although the experimenter did estimate the worst-case magnitude of the errors at 15% to 25% of the peak heating value. This should be regarded as the accuracy band of the peak heat transfer coefficient.

FREESTREAM MACH NUMBER = 5.85
REFERENCE PRESSURE PREF = 1.432 PSIA
REFERENCE HEAT TRANSFER COEFFICIENT HREF = 0.0108 BTU/(FT*2-SEC-DEG R)
DEL = FIN ANGLE, DEGREES
XLE = X-LOCATION OF FIN LEADING EDGE, INCHES
YLE = Y-LOCATION OF FIN LEADING-EDGE, INCHES
PO = WIND TUNNEL STAGNATION PRESSURE, PSIA
TO = WIND TUNNEL STAGNATION TEMPERATURE, DEGREES RANKINE
X = X-LOCATION OF SPANWISE INSTRUMENTATION ROW, INCHES
Y = Y-LOCATION OF MEASUREMENT POINT, INCHES
Z = HEIGHT ABOVE FLAT PLATE, INCHES
M = MACH NUMBER
P = WALL STATIC PRESSURE, PSIA

*****BOUNDARY LAYER PROFILE*******

Z	M
0.018	2.116
0.043	2.89
0.066	3.24
0.091	3.58
0.120	4.33
0.145	4.78
0.170	5.25
0.195	5.65
0.220	5.85
0.246	5.91
0.276	5.92
0.301	5.95
0.329	5.92

***************************WALL PRESSURE DATA***********************************

DEL=6.0	XLE=8.48	DEL=8	XLE=8.52	DEL=10	XLE=8.53
YLE=3.13	PO=2116.0	YLE=3.13	PO=2105.0	YLE=3.06	PO=2115.0
TO=1128.0	X=15.0	TO=1126.0	X=15.0	TO=1091.0	X=15.0
Y	P/PREF	Y	P/PREF	Y	P/PREF
4.25	2.451	4.25	2.953	4.25	3.673
4.75	1.431	4.75	1.738	4.75	3.826
5.25	1.508	5.25	1.627	5.25	1.452
5.75	1.333	5.75	1.529	5.75	1.780
6.25	0.991	6.25	1.194	6.25	1.696
6.75	0.991	6.75	0.998	6.75	1.152
7.25	1.012	7.25	1.026	7.25	1.026
7.75	1.061	7.75	1.068	7.75	1.082
8.25	1.089	8.25	1.068	8.25	1.096
DEL=12	XLE=8.46	DEL=16	XLE=8.5	DEL=20	XLE=8.53
YLE=2.75	PO=2112.0	YLE=2.75	PO=2115.0	YLE=2.73	PO=2111.0
TO=1126.0	X=15.0	TO=1136.0	X=15.0	TO=1108.0	X=13.0
Y	P/PREF	Y	P/PREF	Y	P/PREF
4.25	4.825	4.75	6.927	4.75	8.840
4.75	3.079	5.25	4.406	5.25	1.731
5.25	1.515	5.75	1.850	5.75	2.241
5.75	1.857	6.25	2.039	6.25	2.458
6.25	1.766	6.75	2.241	6.75	2.269
6.75	1.256	7.25	2.143	7.25	1.096
7.25	0.984	7.75	1.270	7.75	1.187
7.75	1.033	8.25	1.277	8.25	1.277
8.25	1.040				

****************************HEAT TRANSFER DATA***********************************

DEL=6.0 XLE=8.49
YLE=2.8 PO=2121.0
TO=1129.0 X=15.0

Y	H/HREF
3.25	0.117
3.50	0.529
3.75	2.717
4.00	2.636
4.25	2.071
4.50	1.482
4.75	0.965
5.00	1.048
5.25	1.099
5.50	1.141

DEL=8.0 XLE=8.58
YLE=3.1 PO=2119.0
TO=1117.0 X=15.00

Y	H/HREF
3.75	0.037
4.00	0.852
4.25	3.150
4.50	3.307
4.75	2.331
5.00	1.662
5.25	1.371
5.50	1.157
5.75	1.076
6.25	0.789
6.75	1.054
7.25	1.295
7.75	1.220
8.25	1.043

DEL=10.0 XLE=8.60
YLE=3.13 PO=2124.0
TO=1104.0 X=15.0

Y	H/HREF
4.00	0.102
4.25	1.192
4.50	4.031
4.75	3.743
5.00	2.199
5.25	1.766
5.50	1.634
5.75	1.414
6.25	1.050
6.75	1.197
7.25	1.354
7.75	1.199
8.25	1.058

DEL=12.0 XLE=8.52
YLE=2.88 PO=2129.0
TO=1098.0 X=15.0

Y	H/HREF
3.75	0.007
4.00	0.164
4.25	1.458
4.50	4.713
4.75	4.352
5.00	2.361
5.25	1.805
5.50	1.855
5.75	1.756
6.25	1.065
6.75	1.203
7.25	1.398
7.75	1.252
8.25	1.121

DEL=16.0 XLE=8.56
YLE=2.88 PO=2129.0
TO=1120.0 X=15.0

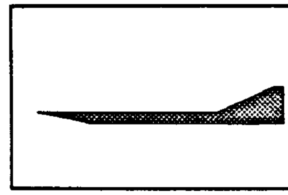
Y	H/HREF
4.00	0.025
4.25	0.075
4.50	0.297
4.75	3.010
5.00	5.838
5.25	4.670
5.50	2.735
5.75	2.183
6.25	1.844
6.75	2.085
7.25	1.491
7.75	1.216
8.25	1.058

DEL=20.0 XLE=8.58
YLE=2.63 PO=2122.0
TO=1109.0 X=15.0

Y	H/HREF
4.25	0.005
4.50	0.079
4.75	0.626
5.00	3.752
5.25	6.827
5.50	5.625
5.75	3.195
6.25	2.363
6.75	3.176
7.25	2.629
7.75	1.467
8.25	0.883

********************************END OF FILE***************************************

Ref.: 16, 17, 28
Author: Coleman, G. T.
Geometry: 2-D Compression Corner
Mach number: 9
Data: p_{wall}, c_h



Coleman, G.T., "Hypersonic Turbulent Boundary Layer Studies," *Ph.D. Thesis*, Univ. of London, 1973.

Coleman, G.T., and Stollery, J.L., "Heat Transfer From Hypersonic Turbulent Flow At a Wedge Compression Corner," *Journal of Fluid Mechanics*, Vol. 56, 1972, pp. 741-752.

Elfstrom, G.M., "Turbulent Hypersonic Flow at a Wedge-Compression Corner," *Journal of Fluid Mechanics*, Vol. 53, 1972, pp. 113-127.

A flat plate and wedge compression corner were used to generate this dataset in a hypersonic gun tunnel with nitrogen as the test gas. Experiments are reported in Refs. 16 and 17 at Mach numbers of 8.96 and 9.22, though only the latter are included in this database. The slightly-lower Mach number data were also at a lower Reynolds number where boundary-layer tripping was thought necessary, hence these data are not included. Similarly, data obtained on a hollow-cylinder-flare model were not included because no incoming boundary-layer profile was measured.

The Mach 9.22 data include compression corner angles of 15, 30, 34, and 38 degrees for which surface-pressure and heat-transfer data are tabulated here. Users are encouraged to consult the cited References for a complete discussion of these data.

Note that the x-dimension cited in the data tables is always in the streamwise direction, even for points located on the sloped surface of the compression ramp. The origin of x is fixed at the compression corner, so that locations upstream of the corner have negative values.

The tabulated surface pressure data were actually obtained by Elfstrom in a companion study (Ref. 28). In none of these references are the stagnation and freestream static pressure conditions of the flow explicitly given. Rather, static pressure distributions are only cited in normalized form. This is thought to be typical of gun-tunnel operations, where a constant value of stagnation pressure is never actually achieved and thus normalization is a necessity. Users of these pressure data should bear in mind the possible adverse effect of such a procedure on the accuracy of the data.

The measured boundary-layer profile was actually taken "near the end of" the 76 cm flat plate. No boundary-layer integral parameters are stated in the cited references. The boundary-layer wake-strength parameter, however, is stated to be 0.2.

*********************Coleman Mach 9 Compression Corner Data********************

**************************Boundary-Layer Profile********************************

Minf = 9.22
Re_inf/cm = 4.7E+05
Tstagnation = 1070 deg K
Tinf = 64.5 deg K
Twall = 295 deg K
Twall/Trecovery = 0.28
Delta = 0.72 cm

y/Delta	M/Minf	U/Uinf
0.040	0.253	0.620
0.078	0.349	0.760
0.083	0.370	0.780
0.125	0.365	0.780
0.142	0.386	0.795
0.189	0.404	0.812
0.210	0.470	0.860
0.230	0.473	0.862
0.277	0.509	0.884
0.294	0.539	0.900
0.322	0.561	0.910
0.332	0.574	0.915
0.341	0.578	0.917
0.364	0.584	0.918
0.406	0.599	0.924
0.424	0.658	0.941
0.461	0.667	0.944
0.490	0.679	0.947
0.517	0.672	0.945
0.525	0.696	0.952
0.542	0.720	0.957
0.560	0.760	0.965
0.578	0.760	0.965
0.590	0.775	0.968
0.640	0.802	0.974
0.669	0.847	0.981
0.709	0.868	0.984
0.730	0.902	0.989
0.770	0.952	0.995
0.794	0.960	0.996
0.798	0.966	0.997
0.859	0.974	0.998
0.888	0.980	0.998
0.920	0.988	0.998
0.978	0.990	0.999
0.998	0.995	0.999
1.04	0.996	0.999
1.13	1.00	1.00
1.25	1.00	1.00

*********************Coleman Mach 9 Compression Corner Data********************

Minf = 9.22
Re_inf/cm = 4.7E+05
ReL = 26.2E+06
Tstagnation = 1070 deg K
Tinf = 64.5 deg K
Twall = 295 deg K
Twall/Trecovery = 0.28
Pinf/Pstagnation = 0.45
Delta = 0.72 cm

Alpha = 15 degrees
Qinf = 6.07 W/cm**2

X, cm	Pw/Pinf	X, cm	Qw/Qinf
-1.9	0.99	-4.2	1.06
-1.4	1.0	-3.65	1.11
-0.9	1.02	-3.1	0.96
-0.4	1.04	-2.6	0.96
0.3	3.47	-2.05	1.03
0.84	4.7	-1.65	0.86
1.1	5.86	-1.35	0.94

Alpha = 30 degrees
Qinf = 6.17 W/cm**2

X, cm	Pw/Pinf	X, cm	Qw/Qinf
-1.65	1.05	-5.7	0.99
-.14	1.05	-4.85	0.96
-1.14	1.06	-4.4	1.09
-0.89	1.08	-4.2	0.94
-0.64	1.11	-3.65	1.0
-0.38	1.28	-3.1	0.94
0.25	7.45	-2.6	0.95

1.6	7.4
1.87	7.4
2.4	10.4
2.67	11.5
3.2	11.8
3.45	11.9
4.24	11.9

-1.1	1.0
-0.85	0.92
-0.6	0.8
0.35	3.16
0.6	2.91
0.85	3.78
1.35	4.27
1.6	4.68
1.85	5.42
2.1	6.3
2.35	6.67
2.6	6.65
3.15	7.69
3.4	8.05
3.9	8.5
4.4	8.44
4.9	8.61
6.7	8.65
7.2	8.04

0.56	15.8
0.84	24.2
1.15	31.8
1.73	34.2
2.0	36.0
2.61	36.2
2.89	36.4
3.5	36.4
3.8	36.0
4.65	36.0
5.6	36.4

-2.35	0.87
-2.05	0.95
-1.9	0.95
-1.35	0.93
-1.1	0.94
-0.85	0.96
-0.6	0.81
-0.35	0.77
0.25	5.8
0.45	6.7
0.7	8.6
1.0	10.6
1.2	13.1
1.5	15.6
1.7	15.7
2.05	17.7
2.24	18.1
2.5	19.6
2.7	18.6
3.0	18.5
3.3	17.7
3.6	17.5
3.7	17.0
4.1	15.9
4.25	16.6
4.7	17.1
5.3	16.3
6.1	14.8
6.6	15.4

Alpha = 34 degrees
Qinf = 6.29 W/cm**2

X, cm	Pw/Pinf
-2.67	1.02
-2.4	1.02
-2.16	1.33
-1.9	1.9
-1.65	2.55
-1.4	3.36
-1.15	4.56
-0.88	4.98
-0.64	4.75
-0.38	5.31
0.25	6.97
0.56	9.9
0.87	12.6
1.17	19.1
1.47	26.9
1.78	53.0
2.08	62.3
2.4	49.3
3.0	51.0
3.63	46.8
3.94	46.2

X, cm	Qw/Qinf
-7.6	-0.95
-6.65	1.03
-5.7	0.98
-5.15	1.03
-4.65	1.03
-4.2	1.0
-3.9	0.89
-3.65	0.93
-3.35	0.77
-3.1	0.9
-2.85	1.74
-2.6	1.35
-2.35	1.79
-2.05	2.24
-1.9	2.16
-1.65	2.08
-1.35	1.8
-1.1	1.67
-0.85	1.71
-0.6	1.52
-0.35	2.14
0.25	3.22
0.45	2.85
0.7	5.85
1.0	6.04
1.2	9.91
1.5	11.1
1.7	14.3
2.05	18.0
2.24	21.1
2.5	26.4
2.7	27.6
3.0	29.3
3.3	24.3
3.6	23.9
3.7	21.8
4.25	20.3
4.7	21.4
5.3	21.4
7.1	19.2

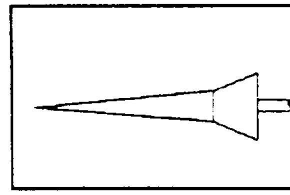
Alpha = 38 degrees
Qinf = 6.56 W/cm**2

X, cm	Pw/Pinf
-4.7	1.03
-4.45	1.11
-4.2	1.24
-3.93	1.46
-3.68	1.44
-3.43	2.54
-3.18	2.67
-2.92	4.45
-2.66	5.25
-2.41	5.7
-2.16	5.7
-1.9	5.7
-1.4	6.2
-1.14	6.2
-0.89	6.2
-0.64	6.6
-0.38	6.7
0.25	7.2
0.5	8.5
0.75	11.4
1.0	15.1
1.25	20.8
1.5	29.0
1.75	49.0
2.0	59.0
2.25	75.5
2.54	86.0
2.8	93.0
3.05	77.5
3.3	69.5
3.81	59.0
4.06	61.5
4.32	59.6
4.57	57.5
5.33	59.0

X, cm	Qw/Qinf
-11.2	0.9
-10.2	0.9
-7.6	1.0
-7.1	1.02
-6.65	0.95
-6.1	1.1
-5.7	0.86
-5.45	1.22
-5.15	1.86
-4.85	1.8
-4.65	2.22
-4.4	2.4
-4.2	2.05
-3.9	2.24
-3.65	2.15
-3.35	2.18
-2.85	1.92
-2.6	1.82
-2.35	1.65
-2.05	1.93
-1.9	1.83
-1.65	1.7
-1.35	1.89
-1.1	1.88
-0.85	1.98
-0.6	1.94
0.25	2.86
0.45	3.25
0.70	4.16
1.0	4.82
1.2	6.47
1.6	10.0
1.7	10.6
2.24	16.4
2.5	18.7
2.7	23.3
3.0	29.0
3.15	27.2
3.3	31.3
3.6	31.0
3.7	28.5
4.25	25.1

4.4	23.7
4.65	25.2
4.7	23.7
4.9	24.3
5.2	22.9
5.3	23.4
5.45	22.5
5.75	22.4
6.7	22.7

Ref.: 40, 39, 38
Author: Holden, M. S.
Geometry: Axisymmetric Cone-Flare
Mach number: 11, 13
Data: p_{wall}, c_h



Holden, M.S., "Experimental Studies of Quasi-Two-Dimensional and Three- Dimensional Viscous Interaction Regions Induced by Skewed- Shock and Swept-Shock Boundary Layer Interaction," *AIAA Paper 84-1677*, 1984.

Holden, M.S., Havener, A.G. and Lee, C.H., "Shock Wave/Turbulent Boundary Layer Interaction in High- Reynolds-Number Hypersonic Flows," *CUBRC-86681*, 1986.

Holden, M.S., Bergman, R.C., Harvey, J., Duryea, G.R. and Moselle, J.R., "Studies of the Structure of Attached and Separated Regions of Viscous/Inviscid Interaction and the Effects of Combined Surface Roughness and Blowing in High Reynolds Number Hypersonic Flows," *AFOSR-89-0033TR*, 1988

The data consist of surface pressures and heat transfer coefficients beneath the axisymmetric interaction generated by the shock due to a flare interacting with the turbulent boundary layer on a large, sharp-nosed 6 degree half-angle cone in the Calspan 96-inch Shock Tunnel. Flare angles of 30 and 36 degrees were tested at both Mach 11 and Mach 13, comprising four shock-tunnel runs as tabulated below. The data given below were not published previously, but were obtained directly from M. S. Holden

Boundary-layer profiles just ahead of the cone-flare intersection were measured via 11-tube pitot- and temperature-rakes and are plotted in CUBRC Report 86681 referenced above. The locations of the surveys were 1.2 inches upstream of the corner for Mach 11 and 2.0 inches upstream for Mach 13. These profiles were necessarily rather coarse due to the manner in which they were obtained. In their place, Holden has provided "interpolated" profiles in which points are given at increments of 0.02 in y/δ. Users of these data should bear in mind that the original, measured boundary-layer profiles consisted of only 11 data points across the boundary-layer thickness. Also, no boundary-layer integral parameters were provided by the experimenter, so none are tabulated here.

The location of the flare compression corner was 104.6 inches along the cone surface from the cone tip. It appears that the given x-dimensions of the instrumentation sites are all given in terms of distance along the cone surface from its tip, even for $x > 104.6$ inches where the instrumentation was actually mounted on the flare. Y is the corresponding dimension normal to the cone surface.

Important note: Although the flare angles cited by Holden and tabulated here are given as 30 and 36 degrees, their actual angles with respect to the symmetry axis of the cone-flare model are 36 and 42 degrees, respectively. The 30 and 36 degree angles are relative to the surface of the 6 degree forecone.

Run number = 8
Cone Angle of Attack (degrees) = 0
Angle of Cone (degrees) = 6
Length Along Cone (inches) = 104.6
Angle of Flare (degrees) = 30
Length of Flare (inches) = 9
Reservoir Total Pressure = 7234 PSIA
Reservoir Total Temperature = 2727 deg R
Freestream Mach number = 10.98
Freestream Velocity = 5931 ft/sec
Freestream Static Pressure = 0.09078 PSIA
Freestream Static Temperature = 121.3 deg R
Freestream Reynolds number = 3651000/ft
Wall Enthalpy (Cp*Tw) = 3183000 $(Ft/sec)^2$

********WALL PRESSURE & HEAT TRANSFER DATA******************BOUNDARY-LAYER DATA*******************

Gage #	X inches	Press. PSIA	Y inches	U/UE	MACH#	TT/TTE
P1	98.9105	2.366E-01	0.014	0.493	2.186	0.469
P3	100.1195	2.672E-01	0.028	0.572	2.613	0.535
P7	101.9185	2.700E-01	0.042	0.618	2.890	0.576
P9	102.5125	2.686E-01	0.056	0.651	3.105	0.607
P11	103.1135	2.803E-01	0.070	0.676	3.285	0.631
P13	103.7165	2.677E-01	0.084	0.697	3.444	0.652
P14	104.0165	2.669E-01	0.098	0.716	3.589	0.670
P16	104.6765	2.250E+00	0.112	0.731	3.725	0.687
P17	105.1835	5.297E+00	0.127	0.746	3.855	0.702
P18	105.6825	6.390E+00	0.141	0.760	3.981	0.716
P19	106.1825	1.043E+01	0.155	0.772	4.104	0.729
P20	106.6825	9.707E+00	0.169	0.784	4.226	0.742
P21	107.1835	"Null"	0.183	0.795	4.347	0.754
P22	107.6835	9.788E+00	0.197	0.806	4.469	0.766
P24	108.6805	1.063E+01	0.211	0.816	4.591	0.778
P26	109.6825	1.135E+01	0.225	0.826	4.715	0.789
P27	110.6825	9.166E+00	0.239	0.836	4.840	0.800
P28	111.6825	9.016E+00	0.253	0.845	4.967	0.810
P29	112.6825	8.899E+00	0.267	0.854	5.097	0.821
			0.281	0.863	5.229	0.831
Gage #	X inches	BTU/FT2/SEC	0.295	0.871	5.363	0.841
HT1	98.9105	5.806E+00	0.309	0.880	5.500	0.851
HT5	101.3175	5.603E+00	0.323	0.887	5.639	0.860
HT6	101.6065	6.656E+00	0.337	0.895	5.781	0.869
HT7	101.9185	6.411E+00	0.351	0.902	5.925	0.877
HT8	102.2195	5.153E+00	0.366	0.910	6.072	0.886
HT9	102.5125	"Null"	0.380	0.916	6.221	0.895
HT10	102.8135	5.930E+00	0.394	0.923	6.371	0.902
HT11	103.1135	5.495E+00	0.408	0.929	6.523	0.910
HT12	103.4165	4.726E+00	0.422	0.935	6.677	0.917
HT13	103.7165	6.010E+00	0.436	0.941	6.831	0.924
HT14	104.0165	5.796E+00	0.450	0.946	6.985	0.931
HT16	104.6765	1.124E+02	0.464	0.952	7.140	0.938
HT17	105.1835	1.181E+02	0.478	0.956	7.294	0.944
HT18	105.6825	"Null"	0.492	0.961	7.447	0.950
HT19	106.1825	1.443E+02	0.506	0.965	7.597	0.955
HT20	106.6825	1.323E+02	0.520	0.969	7.746	0.960
HT21	107.1835	1.316E+02	0.534	0.973	7.891	0.965
HT22	107.6835	1.522E+02	0.548	0.976	8.033	0.970
HT23	108.1765	1.392E+02	0.562	0.980	8.170	0.974
HT24	108.6805	1.208E+02	0.576	0.983	8.301	0.978
HT25	109.1835	1.048E+02	0.590	0.986	8.427	0.981
HT26	109.6825	1.056E+02	0.605	0.988	8.547	0.985
HT27	110.6825	1.005E+02	0.619	0.991	8.659	0.988
HT28	111.6825	9.250E+01	0.633	0.993	8.763	0.990
HT29	112.6825	9.706E+01	0.647	0.995	8.859	0.993
			0.661	0.996	8.946	0.995
			0.675	0.998	9.024	0.997
			0.689	0.999	9.092	0.998
			0.703	1.000	9.150	1.000

Run number = 4
Cone Angle of Attack (degrees) = 0
Angle of Cone (degrees) = 6
Length Along Cone (inches) = 104.6
Angle of Flare (degrees) = 36
Length of Flare (inches) = 9
Reservoir Total Pressure = 7001 PSIA
Reservoir Total Temperature = 2649 deg R
Freestream Mach number = 10.97
Freestream Velocity = 5836 ft/sec
Freestream Static Pressure = 0.08943 PSIA
Freestream Static temperature = 117.8 deg R
Freestream Reynolds number = 3755000/ft
Wall Enthalpy (Cp*Tw) = 3183000 $(Ft/sec)^2$

********WALL PRESSURE & HEAT TRANSFER DATA*****************BOUNDARY-LAYER DATA*******************

Gage #	X inches	Press. PSIA	Y inches	U/UE	MACH#	TT/TTE
P1	98.9105	2.6728E-01	0.014	0.493	2.186	0.469
P3	100.1195	2.8851E-01	0.028	0.572	2.613	0.535
P7	101.9185	3.4467E-01	0.042	0.618	2.890	0.576
P9	102.5125	8.0524E-01	0.056	0.651	3.105	0.607
P11	103.1135	1.29314E+00	0.070	0.676	3.285	0.631
P13	103.7165	1.38824E+00	0.084	0.697	3.444	0.652
P14	104.0165	1.53297E+00	0.098	0.716	3.589	0.670
P16	104.6765	1.30152E+00	0.112	0.731	3.725	0.687
P17	105.1835	"Null"	0.127	0.746	3.855	0.702
P18	105.6825	"Null"	0.141	0.760	3.981	0.716
P19	106.1825	1.49127E+01	0.155	0.772	4.104	0.729
P20	106.6825	1.51135E+01	0.169	0.784	4.226	0.742
P21	107.1835	1.26621E+01	0.183	0.795	4.347	0.754
P22	107.6835	1.39913E+01	0.197	0.806	4.469	0.766
P24	108.6805	1.45225E+01	0.211	0.816	4.591	0.778
P26	109.6825	1.54217E+01	0.225	0.826	4.715	0.789
P27	110.6825	1.29523E+01	0.239	0.836	4.840	0.800
P28	111.6825	1.19923E+01	0.253	0.845	4.967	0.810
P29	112.6825	1.22768E+01	0.267	0.854	5.097	0.821
			0.281	0.863	5.229	0.831
Gage #	X inches	BTU/FT2/SEC	0.295	0.871	5.363	0.841
HT1	98.9105	5.85107E+00	0.309	0.880	5.500	0.851
HT5	101.3175	5.71897E+00	0.323	0.887	5.639	0.860
HT6	101.6065	5.80157E+00	0.337	0.895	5.781	0.869
HT7	101.9185	6.16079E+00	0.351	0.902	5.925	0.877
HT8	102.2195	9.01738E+00	0.366	0.910	6.072	0.886
HT9	102.5125	1.47118E+01	0.380	0.916	6.221	0.895
HT10	102.8135	1.46640E+01	0.394	0.923	6.371	0.902
HT11	103.1135	1.32007E+01	0.408	0.929	6.523	0.910
HT12	103.4165	1.33030E+01	0.422	0.935	6.677	0.917
HT13	103.7165	1.19369E+01	0.436	0.941	6.831	0.924
HT14	104.0165	1.74385E+01	0.450	0.946	6.985	0.931
HT16	104.6765	"Null"	0.464	0.952	7.140	0.938
HT17	105.1835	9.00276E+01	0.478	0.956	7.294	0.944
HT18	105.6825	1.72171E+02	0.492	0.961	7.447	0.950
HT19	106.1825	2.03513E+02	0.506	0.965	7.597	0.955
HT20	106.6825	1.97140E+02	0.520	0.969	7.746	0.960
HT21	107.1835	1.77999E+02	0.534	0.973	7.891	0.965
HT22	107.6835	1.75618E+02	0.548	0.976	8.033	0.970
HT23	108.1765	1.65347E+02	0.562	0.980	8.170	0.974
HT24	108.6805	1.46599E+02	0.576	0.983	8.301	0.978
HT25	109.1835	1.44159E+02	0.590	0.986	8.427	0.981
HT26	109.6825	1.36357E+02	0.605	0.988	8.547	0.985
HT27	110.6825	1.29164E+02	0.619	0.991	8.659	0.988
HT28	111.6825	1.04948E+02	0.633	0.993	8.763	0.990
HT29	112.6825	1.02294E+02	0.647	0.995	8.859	0.993
			0.661	0.996	8.946	0.995
			0.675	0.998	9.024	0.997
			0.689	0.999	9.092	0.998
			0.703	1.000	9.150	1.000

Run number = 7
Cone Angle of Attack (degrees) = 0
Angle of Cone (degrees) = 6
Length Along Cone (inches) = 104.6
Angle of Flare (degrees) = 30
Length of Flare (inches) = 9
Reservoir Total Pressure = 17230 PSIA
Reservoir Total Temperature = 3246 deg R
Freestream Mach number = 12.92
Freestream Velocity = 6634 ft/sec
Freestream Static Temperature = 109.7 deg R
Freestream Static Pressure = 0.07272 PSIA
Freestream Reynolds number = 4000000/ft
Wall Enthalpy (Cp*Tw) = 3183000 $(Ft/sec)^2$

********WALL PRESSURE & HEAT TRANSFER DATA*****************BOUNDARY-LAYER DATA*******************

Gage #	X inches	Press. PSIA
P1	98.9105	2.577E-01
P3	100.1195	3.032E-01
P7	101.9185	3.241E-01
P9	102.5125	3.040E-01
P11	103.1135	3.605E-01
P13	103.7165	3.650E-01
P14	104.0165	4.115E-01
P16	104.6765	"Null"
P17	105.1835	6.149E+00
P18	105.6825	7.350E+00
P19	106.1825	1.358E+01
P20	106.6825	1.243E+01
P21	107.1835	"Null"
P22	107.6835	1.218E+01
P24	108.6805	1.394E+01
P26	109.6825	1.431E+01
P27	110.6825	1.188E+01
P28	111.6825	1.175E+01
P29	112.6825	1.219E+01

Gage #	X inches	BTU/FT2/SEC
HT1	98.9105	"Null"
HT5	101.3175	8.217E+00
HT6	101.6065	9.402E+00
HT7	101.9185	9.852E+00
HT8	102.2195	8.042E+00
HT9	102.5125	9.473E+00
HT10	102.8135	8.531E+00
HT11	103.1135	8.600E+00
HT12	103.4165	7.930E+00
HT13	103.7165	1.013E+01
HT14	104.0165	8.931E+00
HT16	104.6765	4.236E+02
HT17	105.1835	3.791E+02
HT18	105.6825	"Null"
HT19	106.1825	3.199E+02
HT20	106.6825	2.818E+02
HT21	107.1835	4.178E+02
HT22	107.6835	3.879E+02
HT23	108.1765	3.152E+02
HT24	108.6805	2.296E+02
HT25	109.1835	2.287E+02
HT26	109.6825	1.925E+02
HT27	110.6825	1.819E+02
HT28	111.6825	1.624E+02
HT29	112.6825	1.455E+02

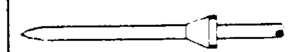
Y inches	U/UE	MACH#	TT/TTE
0.015	0.486	2.266	0.445
0.029	0.567	2.718	0.515
0.044	0.614	3.014	0.559
0.059	0.648	3.243	0.591
0.074	0.674	3.437	0.617
0.088	0.696	3.609	0.639
0.103	0.714	3.766	0.659
0.118	0.731	3.914	0.676
0.133	0.746	4.056	0.692
0.147	0.759	4.194	0.707
0.162	0.772	4.329	0.722
0.177	0.784	4.463	0.735
0.191	0.795	4.598	0.748
0.206	0.806	4.732	0.760
0.221	0.817	4.869	0.772
0.236	0.827	5.007	0.784
0.250	0.837	5.148	0.795
0.265	0.847	5.291	0.807
0.280	0.856	5.437	0.817
0.295	0.864	5.587	0.828
0.309	0.873	5.740	0.838
0.324	0.881	5.896	0.848
0.339	0.889	6.056	0.858
0.353	0.897	6.220	0.867
0.368	0.904	6.387	0.877
0.383	0.911	6.557	0.885
0.398	0.918	6.731	0.894
0.412	0.925	6.907	0.902
0.427	0.931	7.086	0.910
0.442	0.937	7.268	0.918
0.457	0.943	7.451	0.925
0.471	0.948	7.636	0.932
0.486	0.953	7.821	0.938
0.501	0.958	8.006	0.944
0.515	0.962	8.191	0.950
0.530	0.966	8.374	0.955
0.545	0.970	8.555	0.960
0.560	0.974	8.733	0.965
0.574	0.978	8.907	0.970
0.589	0.981	9.076	0.974
0.604	0.984	9.239	0.978
0.619	0.987	9.395	0.981
0.633	0.989	9.543	0.985
0.648	0.991	9.683	0.988
0.663	0.993	9.814	0.990
0.677	0.995	9.934	0.993
0.692	0.996	10.043	0.995
0.707	0.998	10.141	0.997
0.722	0.999	10.227	0.998
0.736	1.000	10.300	1.000

Run number = 6
Cone Angle of Attack (degrees) = 0
Angle of Cone (degrees) = 6
Length Along Cone (inches) = 104.6
Angle of Flare (degrees) = 36
Length of Flare (inches) = 9
Reservoir Total Pressure = 17600 PSIA
Reservoir Total Temperature = 3104 deg R
Freestream Mach number = 13.10
Freestream Velocity = 6458 ft/sec
Freestream Static Pressure = 0.07345 PSIA
Freestream Static Temperature = 102.6 deg R
Freestream Reynolds number = 5090000/ft
Wall Enthalpy (Cp*Tw) = 3183000 $(Ft/sec)^2$

********WALL PRESSURE & HEAT TRANSFER DATA*****************BOUNDARY-LAYER DATA*******************

Gage #	X inches	Press. PSIA	Y inches	U/UE	MACH#	TT/TTE
P1	98.9105	2.8474E-01	0.015	0.486	2.266	0.445
P3	100.1195	2.9218E-01	0.029	0.567	2.718	0.515
P7	101.9185	4.9656E-01	0.044	0.614	3.014	0.559
P9	102.5125	9.9969E-01	0.059	0.648	3.243	0.591
P11	103.1135	1.3961E+00	0.074	0.674	3.437	0.617
P13	103.7165	1.5696E+00	0.088	0.696	3.609	0.639
P14	104.0165	1.7067E+00	0.103	0.714	3.766	0.659
P16	104.6765	1.5295E+00	0.118	0.731	3.914	0.676
P17	105.1835	5.0433E+00	0.133	0.746	4.056	0.692
P18	105.6825	"Null	0.147	0.759	4.194	0.707
P19	106.1825	1.8144E+01	0.162	0.772	4.329	0.722
P20	106.6825	2.1674E+01	0.177	0.784	4.463	0.735
P21	107.1835	"Null"	0.191	0.795	4.598	0.748
P22	107.6835	1.7335E+01	0.206	0.806	4.732	0.760
P24	108.6805	1.8623E+01	0.221	0.817	4.869	0.772
P26	109.6825	2.0844E+01	0.236	0.827	5.007	0.784
P27	110.6825	1.4811E+01	0.250	0.837	5.148	0.795
P28	111.6825	1.6215E+01	0.265	0.847	5.291	0.807
P29	112.6825	1.6687E+01	0.280	0.856	5.437	0.817
			0.295	0.864	5.587	0.828
Gage #	X inches	BTU/FT2/SEC	0.309	0.873	5.740	0.838
HT1	98.9105	8.8680E+00	0.324	0.881	5.896	0.848
HT5	101.3175	7.2142E+00	0.339	0.889	6.056	0.858
HT6	101.6065	7.6842E+00	0.353	0.897	6.220	0.867
HT7	101.9185	1.0260E+01	0.368	0.904	6.387	0.877
HT8	102.2195	1.3595E+01	0.383	0.911	6.557	0.885
HT9	102.5125	1.7688E+01	0.398	0.918	6.731	0.894
HT10	102.8135	1.9199E+01	0.412	0.925	6.907	0.902
HT11	103.1135	2.0174E+01	0.427	0.931	7.086	0.910
HT12	103.4165	1.7752E+01	0.442	0.937	7.268	0.918
HT13	103.7165	2.1149E+01	0.457	0.943	7.451	0.925
HT14	104.0165	2.3570E+01	0.471	0.948	7.636	0.932
HT16	104.6765	1.9627E+02	0.486	0.953	7.821	0.938
HT17	105.1835	2.0182E+02	0.501	0.958	8.006	0.944
HT18	105.6825	"Null"	0.515	0.962	8.191	0.950
HT19	106.1825	4.3151E+02	0.530	0.966	8.374	0.955
HT20	106.6825	3.8457E+02	0.545	0.970	8.555	0.960
HT21	107.1835	4.3251E+02	0.560	0.974	8.733	0.965
HT22	107.6835	4.5576E+02	0.574	0.978	8.907	0.970
HT23	108.1765	3.1065E+02	0.589	0.981	9.076	0.974
HT24	108.6805	3.5936E+02	0.604	0.984	9.239	0.978
HT25	109.1835	3.2652E+02	0.619	0.987	9.395	0.981
HT26	109.6825	2.4472E+02	0.633	0.989	9.543	0.985
HT27	110.6825	2.1926E+02	0.648	0.991	9.683	0.988
HT28	111.6825	1.6218E+02	0.663	0.993	9.814	0.990
HT29	112.6825	1.7518E+02	0.677	0.995	9.934	0.993
			0.692	0.996	10.043	0.995
			0.707	0.998	10.141	0.997
			0.722	0.999	10.227	0.998
			0.736	1.000	10.300	1.000

Ref.: 51
Author: Kussoy, M. I., *et al*
Geometry: Axisymmetric Ogive-Cylinder-Flare
Mach number: 7
Data: p_{wall}, c_h, flowfield surveys



Kussoy, M.I. and Horstman, C.C., "Documentation of Two- and Three-Dimensional Hypersonic Shock Wave/Turbulent Boundary Layer Interaction Flows," *NASA TM 101075*, 1989.

This experiment provides data on an axisymmetric ogive-cylinder body with flares of various angles at Mach 7. The range of flare angles spans conditions from fully unseparated to well-separated flow. The data include wall pressures, heat transfer, and limited flowfield surveys obtained by pressure probes. The following tabulation includes freestream conditions, the incoming boundary-layer profile, three additional profiles through the 20 degree flare interaction, and wall pressure and heat transfer data for the 20, 30, 32.5, and 35 degree flare interactions. Note that the given dimension X is actually measured *along the surface of the model* with origin at the cylinder-flare corner. Points upstream of this location have negative X-values, while those downstream lie along the flare and have positive values. The cylinder-flare corner itself lies at 139 cm downstream from the tip of the ogival nose.

Users of these data are encouraged to read Ref. 51, which includes additional pertinent information. The uncertainty estimates placed on the data by the experimenters are also discussed therein. Note that Ref. 51 also contains data on an ogive-cylinder model with a fin, but these data are not included in the database due to the complexity of the geometry.

******************Kussoy et al, Ogive-Cylinder-Flare, Mach 7*******************

******************Freestream Flow Conditions***********************************

Minf = 7.05
Tinf = 81.2 deg K
Pinf = 576 Pa
RHOinf = 0.0252 kg/m**3
Twall = 311 deg K
Uinf = 1274 m/s
Re/m = 5.8E+06

*****************Incoming Boundary-Layer Conditions****************************

DELTA = 2.5 cm
DELTA* = 0.74 cm
THETA = 0.065 cm
Cfinf = 1.22E-03
Chinf = 0.59E-03

Y, cm	M	U/Uinf	TT/TTinf
0.000	0.000	0.000	0.350
0.065	1.547	0.470	0.638
0.093	2.177	0.601	0.690
0.120	2.745	0.699	0.752
0.180	3.111	0.759	0.805
0.250	3.356	0.791	0.830
0.320	3.610	0.822	0.858
0.390	3.835	0.836	0.858
0.460	4.070	0.858	0.877
0.620	4.626	0.896	0.905
0.770	5.248	0.929	0.930
0.940	5.739	0.954	0.954
1.090	6.070	0.967	0.966
1.260	6.340	0.982	0.986
1.450	6.599	0.986	0.986
1.640	6.820	0.992	0.991
1.900	6.962	0.999	1.000
2.150	7.022	1.000	1.000
2.400	7.048	1.000	1.000
2.700	7.050	1.000	1.000
3.000	7.050	1.000	1.000

**************Wall Pressure and Heat Transfer Distributions********************

Alpha = 20 degrees

X, cm	Pw/Pinf	X, cm	Qw/Qinf
-11.3	0.97	12.06	0.98
-10.3	0.98	-10.8	1.05
-9.3	0.96	-9.52	1.06
-8.3	0.98	-8.26	1.02
-7.3	0.97	-6.98	1.03
-6.3	0.99	-5.73	1.0
-5.3	1.03	-4.44	1.03
-4.3	1.00	-3.18	1.01
-3.3	1.02	-1.9	0.99
-2.3	1.0	-0.64	0.86
-1.3	1.09	1.1	4.79
1.1	2.02	1.6	4.17
1.6	3.68	2.1	4.99
2.1	5.31	2.6	5.27
2.6	5.96	3.1	5.94
3.6	7.42	3.6	5.74
4.1	8.27	4.6	6.04
4.6	9.10	5.1	7.99
5.1	9.95	6.1	8.59
6.1	10.8	7.1	8.74
7.1	11.3	8.1	8.64
10.1	12.14	9.1	8.77
12.1	12.26	10.1	9.18
14.1	12.5	12.1	9.68

Alpha = 30 degrees

X, cm	Pw/Pinf	X, cm	Qw/Qinf
-11.3	1.00	-12.08	0.99
-10.3	0.98	-10.8	0.99
-9.3	0.97	-9.52	1.0
-8.3	0.98	-8.26	1.0
-7.3	1.0	-6.98	1.01
-6.3	1.0	-5.73	1.01
-5.3	0.98	-4.44	1.0
-4.3	1.02	-3.18	0.99
-3.3	1.09	-1.9	0.99
-2.3	1.39	-0.64	1.02
-1.3	1.73	1.1	8.2
1.1	7.75	1.6	8.97
1.6	9.58	2.1	10.09
2.1	12.85	3.1	12.05
2.6	15.06	3.6	13.42
3.6	19.51	4.6	14.39
4.1	21.33	5.1	15.25
4.6	21.94	6.1	14.86
6.1	22.82	7.1	14.9
7.1	22.88	8.1	14.6
8.1	23.71	9.1	14.75
10.1	24.4	10.1	14.45
12.1	23.62	11.1	14.41
14.1	22.6	12.1	13.98

13.1	9.59	13.1	13.02
14.1	9.36	14.1	12.87
15.1	8.55	15.1	12.21

Alpha = 32.5 degrees

X, cm	Pw/Pinf	X, cm	Qw/Qinf
-11.3	1.01	-12.06	1.0
-10.3	0.99	-10.8	0.99
-9.3	0.98	-9.52	1.0
-8.3	1.01	-8.26	1.01
-7.3	0.97	-6.98	1.03
-6.3	1.01	-5.73	1.01
-5.3	1.03	-4.44	1.05
-4.3	1.12	-3.18	1.09
-3.3	1.23	-1.9	1.33
-2.3	1.71	-0.64	2.16
-1.3	2.56	1.05	6.79
0.55	5.85	1.55	7.44
1.05	7.50	2.05	9.23
1.55	8.42	2.55	10.64
2.05	12.02	3.05	12.82
2.55	14.4	3.55	14.55
3.55	21.19	4.55	16.28
4.05	23.57	5.05	17.05
4.55	25.83	6.05	17.05
6.05	27.14	7.05	16.67
7.05	27.74	8.05	16.41
8.05	27.62	9.05	16.54
10.05	27.74	10.05	15.90
		11.05	15.77

Alpha = 35 degrees

X, cm	Pw/Pinf	X, cm	Qw/Qinf
-11.3	0.97	-12.06	0.99
-10.3	0.98	-10.8	1.07
-9.3	1.0	-9.52	1.0
-8.3	1.15	-8.26	1.04
-7.3	1.45	-6.98	1.02
-6.3	2.01	-5.73	1.26
-5.3	2.53	-4.44	1.83
-4.3	3.25	-3.18	2.39
-3.3	3.63	-1.9	2.63
-2.3	4.41	-0.64	2.55
-1.3	4.56	1.07	6.4
1.07	6.95	1.57	7.9
1.57	8.82	2.07	9.65
2.07	11.07	2.57	11.75
2.57	14.05	3.07	13.82
3.07	18.45	3.57	16.1
3.57	21.79	5.07	20.03
4.07	25.71	6.07	21.96
4.57	28.93	7.07	21.37
7.07	33.68	9.07	19.72
8.07	33.69	10.07	19.97
10.07	30.04		

*****************************Flowfield Surveys**********************************

Alpha = 20 degrees, X = 5.5 cm

Y, cm	M	P/Pinf	U/Uinf	TT/TTinf
0.000	0.000	10.539	0.000	0.350
0.053	2.768	10.539	0.763	0.881
0.096	2.800	10.539	0.778	0.907
0.145	2.878	10.539	0.797	0.931
0.195	2.983	10.539	0.812	0.939
0.290	3.266	10.539	0.851	0.968
0.395	3.701	10.120	0.895	0.992
0.495	3.980	9.760	0.914	0.998
0.590	4.043	9.461	0.918	1.000
0.790	7.050	1.000	1.004	1.006
0.990	7.050	1.000	1.004	1.006
1.175	7.050	1.000	1.003	1.004
1.360	7.050	1.000	1.003	1.004

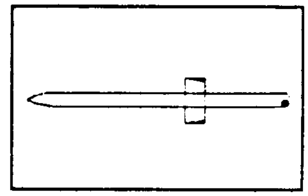
Alpha = 20 degrees, X = 10.3 cm

Y, cm	M	P/Pinf	U/Uinf	TT/TTinf
0.000	0.000	11.976	0.000	0.350
0.055	2.250	11.976	0.718	0.938
0.100	2.859	11.976	0.806	0.955
0.140	3.107	11.976	0.835	0.963
0.185	3.157	11.976	0.840	0.965
0.270	3.253	11.976	0.856	0.980
0.360	3.336	11.976	0.865	0.986
0.450	3.417	11.976	0.875	0.994
0.650	3.605	11.976	0.892	1.000
0.850	3.763	11.976	0.902	1.000
1.050	3.835	11.976	0.904	0.995
1.200	4.089	9.581	0.916	0.989
1.420	7.052	1.000	1.001	1.001
1.620	7.052	1.000	1.001	1.001

Alpha = 20 degrees, X = 15.5 cm

Y, cm	M	P/Pinf	U/Uinf	TT/TTinf
0.000	0.000	12.335	0.000	0.350
0.065	2.533	12.335	0.735	0.881
0.083	2.747	12.335	0.772	0.906
0.100	2.997	12.335	0.810	0.933
0.138	3.121	12.335	0.832	0.954
0.169	3.168	12.335	0.844	0.972
0.198	3.216	12.335	0.852	0.980
0.250	3.286	12.335	0.862	0.988
0.300	3.354	12.335	0.873	0.999
0.400	3.431	12.335	0.880	1.002
0.520	3.486	12.335	0.884	1.001
0.660	3.540	12.335	0.887	1.000
0.710	3.566	12.335	0.889	1.000
0.800	3.613	12.335	0.892	1.000
0.900	3.676	12.335	0.897	1.000
1.000	3.737	12.335	0.901	1.000
1.100	3.777	12.335	0.903	1.000
1.200	3.777	12.335	0.903	1.000

Ref.: 53
Author: Kussoy, M. I., *et al*
Geometry: Axisymmetric Impinging Shock
Mach number: 7
Data: p_{wall}, c_h, c_f, flowfield surveys



Kussoy, M.I. and Horstman, C.C., "An Experimental Documentation of a Hypersonic Shock-Wave Turbulent Boundary Layer Interaction Flow - With and Without Separation," *NASA TM X-62412*, 1975.

Experiments were conducted on a cone-ogive-cylinder model 3.3 m long and 0.203 m in diameter. Concentric with this model was mounted an annular shock-wave generator of 0.51 m outside diameter. The model was water-cooled to maintain a constant 300° surface temperature during tests. Surface instrumentation included static pressures, thermocouples, and a skin friction balance. Pitot, static pressure, and total temperature were measured at regular stations through the interaction using a probe drive built into the cylindrical model.

Two different shock wave strengths were produced by shock generator deflection angles of 7.5° and 15°. However, because of geometrical constraints the annular shock generator was rather short in streamwise extent, leading to a merging of the incident shock and its trailing expansion fan before the shock impinged on the test surface. This makes even the inviscid flowfield complicated, and renders a precise statement of the interaction strength problematic. Nonetheless the data are felt to have continuing value for some code validation and turbulence modeling purposes.

Unfortunately, these data are not available in machine-readable form and we have thus chosen to enter only a subset of the measurements into the database. Since the 7.5° case did not result in boundary-layer separation, it is omitted. All the surface data for the 15° case and a selection of the flowfield profiles for 15° are tabulated below. Users of these data should consult Ref. 53 for more complete information and data.

The experimenters claim an accuracy of ± 10% for surface data, which degrades, however, near separation. Other confidence limits quoted in Ref. 53 are ± 1.5% for total temperature (TT), ± 10% for static pressure (P), ± 6% for static temperature (T), ± 12% for density (RHO), ± 3% for x-velocity component (U), and ± 0.02 cm for vertical position (Y) above the cylindrical model surface. The U uncertainty is further placed at ± 8% near the surface inside the interaction, and ± 35% in the region of reverse flow.

The nomenclature of the data tables is largely standard and self-explanatory. Twm and Twc refer to as-measured and corrected wall shear stress, respectively. The correction was for bouyancy effects. Twc should be used for all-purposes unless an attempt at re-correcting the raw Twm data is contemplated. The term RHOU in the tables refer to mass flux per unit area. The streamwise coordinate X is measured along the surface of the cylindrical test body, with its orgin at a position on the body corresponding to the leading-edge of the annular shock generator. Delta*i and Thetai refer to kinematic displacement and momentum thicknesses, respectively.

****************Kussoy and Horstman M=7 Impinging Shock Data*****************

**********************15 Degree Shock Wave Generator************************

*********************Incoming Freestream Conditions************************

M∞ = 6.86	rho∞ = 0.0312 kg/m**3
P∞ = 607 N/m**2	U∞ = 1132 m/s
T∞ = 67.8deg. K	To∞ = 695deg. K
Tw = 300deg. K	

******************************SURFACE DATA**********************************

X (cm)	Pw (N/m**2)	Twm (N/m**2)	Twc (N/m**2)	qw (w/m**2)
20.0	607.	16.7	16.7	6240.
21.0	607.	16.7	16.7	6240.
22.0	607.	16.7	16.7	6240.
23.0	607.	16.7	16.7	6360.
24.0	607.	16.7	16.7	6580.
25.0	607.	16.7	16.9	6810.
25.5	621.	16.3	17.4	7040.
26.0	689.	15.2	17.4	7260.
26.5	758.	12.3	15.8	7600.
27.0	841.	9.3	14.3	7940.
27.5	951.	5.4	11.6	8400.
28.0	1050.	3.9	11.6	9080.
28.5	1230.	4.5	15.4	9650.
29.0	1420.	8.3	18.1	10200.
29.5	1640.	9.3	18.3	11000.
30.0	1810.	7.8	15.8	11900.
30.5	1940.	5.4	12.2	12900.
31.0	2050.	2.9	8.2	14400.
31.5	2150.	0.5	4.7	15900.
32.0	2210.	-2.0	1.4	17700.
32.5	2280.	-4.4	-1.8	21000.
33.0	2330.	-4.9	-3.7	24400.
33.5	2360.	-2.4	-0.5	28100.
34.0	2400.	1.0	2.8	31200.
34.5	2430.	5.4	8.9	34300.
35.0	2540.	9.8	18.1	37500.
35.5	2760.	14.7	27.5	39900.
36.0	3030.	20.1	34.3	42700.
36.5	3310.	25.5	39.7	45100.
37.0	3590.	31.9	46.1	47200.
37.5	3860.	38.2	52.5	49100.
38.0	4140.	44.1	58.3	50800.
38.5	4410.	50.0	64.2	52200.
39.0	4690.	54.9	68.9	53300.
39.5	4948.	59.3	72.5	54000.
40.0	5120.	64.2	75.2	54400.
40.5	5300.	68.6	77.9	54600.
41.0	5460.	72.1	79.5	54700.
41.5	5600.	75.5	81.7	54700.
42.0	5690.	78.9	82.2	54600.
42.5	5720.	81.9	82.6	54500.
43.0	5720.	84.3	83.3	54400.
43.5	5680.	86.3	83.7	54100.
44.0	5620.	88.3	84.7	53700.
44.5	5540.	89.7	85.3	53200.
45.0	5450.	90.7	85.4	52700.
45.5	5350.	91.7	86.1	52200.
46.0	5240.	92.2	86.3	51500.
46.5	5130.	92.7	86.5	50900.
47.0	5010.	92.2	85.8	50200.
47.5	4890.	91.9	85.3	49500.
48.0	4770.	91.4	84.6	48800.
48.5	5650.	90.7	83.9	47900.
49.0	4520.	90.0	83.5	47200.
49.5	4430.	89.2	82.7	46300.
50.0	4300.	88.3	81.9	45400.
50.5	4190.	87.3	80.9	44500.
51.0	4070.	86.1	79.9	43600.
51.5	3969.	84.8	78.7	42600.
52.0	3850.	83.6	77.7	41700.
52.5	3740.	82.4	76.7	40700.
53.0	3540.	80.9	75.4	39700.
53.5	3640.	79.4	74.1	38800.
54.0	3450.	77.8	72.7	37900.
54.5	3340.	76.0	71.0	37000.
55.0	3250.	74.5	69.7	36100.
55.5	3160.	73.1	68.3	35200.
56.0	3090.	71.1	66.5	34300.
56.5	3000.	69.1	64.7	33500.
57.0	2910.	67.2	63.0	32700.
57.5	2830.	65.7	61.6	31800.
58.0	2760.	63.7	59.8	30900.
58.5	2690.	62.3	58.3	30100.
59.0	2620.	60.8	57.1	29300.
59.5	2550.	59.3	55.8	38500.
60.0	2480.	57.9	54.3	27800.
60.5	2410.	56.9	53.5	27100.
61.0	2340.	55.4	52.2	26400.
61.5	2280.	54.4	51.2	25800.
62.0	2210.	53.4	50.4	25200.
62.5	2140.	52.5	49.5	24600.
63.0	2080.	51.5	48.6	24100.
63.5	2010.	50.5	47.8	23500.
64.0	1960.	49.5	46.9	22900.
64.5	1910.	48.5	46.0	22500.
65.0	1850.	47.6	45.1	21900.
66.0	1777.	46.1	43.7	21000.
67.0	1690.	44.3	42.3	20100.
68.0	1610.	43.0	41.2	19300.
69.0	1550.	41.2	39.6	18600.
70.0	1490.	40.2	38.6	17900.
71.0	1430.	38.9	37.4	17300.
72.0	1380.	37.8	36.2	16700.
73.0	1320.	36.8	35.3	16000.
74.0	1260.	35.8	34.3	15500.
75.0	1210.	35.1	33.7	15100.
76.0	1160.	34.3	33.0	14600.
77.0	1100.	33.3	32.0	14200.
78.0	1060.	32.6	31.3	13700.
79.0	1010.	31.9	30.7	13300.
80.0	979.	31.1	30.0	12800.
81.0	938.	30.4	29.4	12400.
82.0	910.	29.7	28.8	11900.
83.0	883.	29.1	28.3	11500.
84.0	855.	28.4	27.8	11000.
85.0	834.	27.9	27.4	10600.
86.0	814.	27.5	27.0	10200.
87.0	800.	27.0	26.5	9870.
88.0	786.	26.5	26.0	9530.
89.0	772.	26.0	25.5	9310.
90.0	758.	25.5	25.0	9080.
91.0	745.	25.0	24.5	8970.
92.0	731.	24.5	24.1	8850.
93.0	717.	24.3	23.9	8740.
94.0	703.	24.1	23.7	8630.
95.0	689.	24.0	23.6	8510.

*********************FLOWFIELD SURVEY DATA**

15 DEGREE SHOCK WAVE GENERATOR, x = 20.0 cm

Y(CM)	M	P / Pinf	RHO / RHOinf	T / Tinf	U / Uinf	RHOU / RHOUinf	TT / TTinf
0.000	0.000	1.000	0.226	4.430	0.000	0.000	0.432
0.050	1.503	1.000	0.219	4.576	0.468	0.102	0.648
0.075	1.777	1.000	0.230	4.357	0.540	0.124	0.693
0.100	2.013	1.000	0.241	4.155	0.598	0.144	0.733
0.125	2.142	1.000	0.239	4.177	0.638	0.153	0.778
0.150	2.263	1.000	0.247	4.047	0.663	0.164	0.796
0.175	2.340	1.000	0.252	3.968	0.679	0.171	0.807
0.200	2.434	1.000	0.261	3.834	0.694	0.181	0.813
0.250	2.541	1.000	0.270	3.709	0.713	0.192	0.824
0.300	2.627	1.000	0.277	3.610	0.727	0.202	0.832
0.350	2.726	1.000	0.287	3.480	0.741	0.213	0.838
0.400	2.807	1.000	0.295	3.395	0.754	0.222	0.847
0.450	2.854	1.000	0.298	3.359	0.762	0.227	0.855
0.500	2.960	1.000	0.309	3.233	0.776	0.240	0.861
0.600	3.092	1.000	0.322	3.108	0.794	0.256	0.875
0.700	3.274	1.000	0.334	2.911	0.814	0.280	0.884
0.800	3.458	1.000	0.366	2.732	0.833	0.305	0.895
0.900	3.634	1.000	0.388	2.580	0.850	0.330	0.906
1.000	3.812	1.000	0.412	2.431	0.866	0.356	0.916
1.100	3.994	1.000	0.436	2.293	0.881	0.384	0.926
1.200	4.189	1.000	0.465	2.153	0.896	0.416	0.935
1.300	4.396	1.000	0.496	2.016	0.910	0.451	0.944
1.400	4.603	1.000	0.528	1.894	0.923	0.488	0.955
1.500	4.819	1.000	0.563	1.777	0.936	0.527	0.965
1.600	5.035	1.000	0.599	1.670	0.948	0.568	0.975
1.700	5.293	1.000	0.648	1.545	0.959	0.621	0.980
1.800	5.506	1.000	0.689	1.453	0.967	0.666	0.986
1.900	5.735	1.000	0.734	1.362	0.975	0.716	0.991
2.000	5.985	1.000	0.789	1.269	0.982	0.775	0.994
2.100	6.188	1.000	0.834	1.199	0.988	0.824	0.997
2.200	6.358	1.000	0.873	1.146	0.992	0.866	0.999
2.300	6.523	1.000	0.913	1.095	0.995	0.909	1.000
2.400	6.631	1.000	0.941	1.064	0.997	0.937	1.000
2.500	6.724	1.000	0.964	1.037	0.998	0.063	1.000
2.600	6.789	1.000	0.981	1.019	0.999	0.980	1.000
2.700	6.842	1.000	0.995	1.005	1.000	0.995	1.000
2.800	6.861	1.000	1.000	1.000	1.000	1.000	1.000
2.900	6.861	1.000	1.000	1.000	1.000	1.000	1.000
3.000	6.861	1.000	1.000	1.000	1.000	1.000	1.000
3.100	6.861	1.000	1.000	1.000	1.000	1.000	1.000
3.200	6.861	1.000	1.000	1.000	1.000	1.000	1.000
3.300	6.861	1.000	1.000	1.000	1.000	1.000	1.000
3.400	6.861	1.000	1.000	1.000	1.000	1.000	1.000
3.500	6.861	1.000	1.000	1.000	1.000	1.000	1.000

15 DEGREE SHOCK WAVE GENERATOR, x = 28.0 cm

Y(CM)	M	P / Pinf	RHO / RHOinf	T / Tinf	U / Uinf	RHOU / RHOUinf	TT / TTinf
0.000	0.000	1.727	0.390	4.426	0.000	0.000	0.432
0.050	0.647	1.716	0.336	5.105	0.213	0.072	0.540
0.075	0.806	1.705	0.324	5.257	0.269	0.087	0.580
0.100	0.988	1.705	0.322	5.286	0.331	0.107	0.617
0.125	1.131	1.693	0.318	5.332	0.380	0.121	0.654
0.150	1.254	1.682	0.311	5.405	0.424	0.132	0.693
0.175	1.423	1.670	0.315	5.307	0.477	0.150	0.727
0.200	1.591	1.659	0.326	5.091	0.523	0.170	0.747
0.250	1.834	1.648	0.350	4.711	0.580	0.203	0.767
0.300	1.991	1.625	0.362	4.484	0.615	0.223	0.782
0.350	2.140	1.602	0.375	4.272	0.645	0.242	0.796
0.400	2.246	1.580	0.382	4.136	0.666	0.254	0.807
0.450	2.374	1.557	0.393	3.963	0.689	0.271	0.818
0.500	2.510	1.534	0.406	3.779	0.711	0.289	0.828
0.600	2.774	1.477	0.429	3.441	0.750	0.322	0.847
0.700	3.033	1.420	0.452	3.141	0.784	0.354	0.864
0.800	3.291	1.364	0.474	2.874	0.813	0.386	0.880
0.900	3.540	1.307	0.496	2.637	0.838	9.415	0.894
1.000	3.775	1.250	0.512	2.440	0.860	0.440	0.907
1.100	4.007	1.193	0.527	2.263	0.879	0.463	0.920
1.200	4.239	1.136	0.540	2.104	0.896	0.484	0.932
1.300	4.490	1.080	0.555	1.945	0.913	0.507	0.943
1.400	4.772	1.023	0.573	1.783	0.929	0.533	0.954
1.500	4.979	1.000	0.595	1.680	0.941	0.560	0.964
1.600	5.153	1.000	0.623	1.605	0.952	0.593	0.974
1.700	5.330	1.000	0.655	1.528	0.961	0.629	0.982
1.800	5.510	1.000	0.689	1.452	0.968	0.667	0.987
1.900	5.683	1.000	0.723	1.384	0.975	0.704	0.992
2.000	5.889	1.000	0.767	1.304	0.980	0.752	0.994
2.100	6.095	1.000	0.813	1.230	0.986	0.801	0.997
2.200	6.281	1.000	0.856	1.169	0.990	0.847	0.998
2.300	6.447	1.000	0.895	1.118	0.994	0.889	1.000
2.400	6.596	1.000	0.932	1.073	0.996	0.928	1.000
2.500	6.702	1.000	0.959	1.043	0.998	0.957	1.000
2.600	6.781	1.000	0.979	1.021	0.999	0.978	1.000
2.700	6.833	1.000	0.933	1.007	1.000	0.993	1.000
2.800	6.858	1.000	1.000	1.000	1.000	1.000	1.000
2.900	6.858	1.000	1.000	1.000	1.000	1.000	1.000
3.000	6.858	1.000	1.000	1.000	1.000	1.000	1.000
3.100	6.858	1.000	1.000	1.000	1.000	1.000	1.000
3.200	6.858	1.000	1.000	1.000	1.000	1.000	1.000
3.300	6.858	1.000	1.000	1.000	1.000	1.000	1.000
3.400	6.858	1.000	1.000	1.000	1.000	1.000	1.000
3.500	6.858	1.000	1.000	1.000	1.000	1.000	1.000

15 DEGREE SHOCK WAVE GENERATOR, x = 33.0 cm

Y(CM)	M	P / Pinf	RHO / RHOinf	T / Tinf	U / Uinf	RHOU / RHOUinf	TT / TTinf
0.000	0.000	3.841	0.868	4.426	0.000	0.000	0.432
0.050	0.301	3.841	0.605	6.348	0.110	0.067	0.631
0.075	0.333	3.841	0.564	6.807	0.126	0.071	0.679
0.100	0.345	3.841	0.550	6.984	0.132	0.073	0.698
0.125	0.362	3.841	0.546	7.035	0.139	0.076	0.705
0.150	0.362	3.841	0.542	7.087	0.140	0.076	0.710
0.175	0.362	3.841	0.539	7.126	0.140	0.076	0.714
0.200	0.362	3.841	0.536	7.160	0.141	0.075	0.717
0.250	0.351	3.841	0.532	7.223	0.137	0.073	0.722
0.300	0.327	3.841	0.527	7.293	0.128	0.068	0.727
0.350	0.308	3.841	0.523	7.340	0.121	0.063	0.730
0.400	0.213	3.841	0.519	7.400	0.108	0.056	0.732
0.450	0.258	3.841	0.517	7.424	0.102	0.053	0.734
0.500	0.214	3.841	0.514	7.466	0.085	0.044	0.735
0.600	0.145	3.841	0.511	7.515	0.058	0.029	0.736
0.700	0.130	3.841	0.510	7.533	0.052	0.026	0.737
0.800	0.301	3.841	0.516	7.488	0.119	0.062	0.739
0.900	0.457	3.841	0.524	7.332	0.180	0.094	0.744
1.000	0.653	3.841	0.540	7.116	0.253	0.136	0.752
1.100	0.913	3.841	0.568	6.759	0.345	0.196	0.768
1.200	1.165	3.841	0.599	6.409	0.429	0.257	0.792
1.300	1.457	3.841	0.651	5.896	0.515	0.336	0.815
1.400	1.782	3.841	0.725	5.299	0.597	0.433	0.840
1.500	2.136	3.841	0.824	4.662	0.672	0.554	0.863
1.600	2.554	3.841	0.965	3.978	0.743	0.717	0.886
1.700	3.122	3.841	1.203	3.193	0.813	0.978	0.909
1.800	3.757	3.841	1.519	2.529	0.871	1.323	0.932
1.900	4.119	4.432	1.958	2.263	0.903	1.769	0.957
2.000	4.192	6.250	2.769	2.257	0.918	2.542	0.980
2.100	4.252	9.091	4.042	2.249	0.930	3.758	0.998
2.200	4.013	11.364	4.608	2.466	0.919	4.233	1.000
2.300	4.023	11.364	4.625	2.457	0.919	4.252	1.000
2.400	4.023	11.364	4.625	2.457	0.919	4.252	1.000
2.500	3.895	11.364	4.404	2.580	0.912	4.017	1.000
2.600	4.134	8.750	3.713	2.356	0.925	3.435	1.000
2.700	4.624	5.682	2.880	1.973	0.947	2.727	1.000
2.800	4.680	5.114	2.644	1.934	0.949	2.509	1.000
2.900	4.770	4.773	2.545	1.875	0.952	2.424	1.000
3.000	4.882	4.602	2.498	1.842	0.954	2.383	1.000
3.100	4.812	4.545	2.459	1.849	0.954	2.345	1.000
3.200	4.804	4.489	2.422	1.854	0.954	2.309	1.000
3.300	4.796	4.432	2.384	1.859	0.953	2.273	1.000
3.400	4.789	4.375	2.348	1.863	0.953	2.238	1.000
3.500	4.783	4.318	2.313	1.867	0.953	2.204	1.000

15 DEGREE SHOCK WAVE GENERATOR, x = 38.0 cm

Y(CM)	M	P / Pinf	RHO / RHOinf	T / Tinf	U / Uinf	RHOU / RHOUinf	TT / TTinf
0.000	0.000	6.818	1.540	4.426	0.000	0.000	0.432
0.050	1.238	6.761	1.157	5.845	0.436	0.504	0.744
0.075	1.262	6.705	1.126	5.954	0.448	0.505	0.764
0.100	1.285	6.648	1.105	6.015	0.459	0.507	0.778
0.125	1.314	6.591	1.087	6.062	0.471	0.512	0.793
0.150	1.358	6.534	1.085	6.020	0.485	0.526	0.801
0.175	1.398	6.500	1.092	5.952	0.496	0.542	0.804
0.200	1.441	6.477	1.103	5.871	0.508	0.561	0.807
0.250	1.561	6.386	1.136	5.623	0.539	0.612	0.812
0.300	1.681	6.307	1.172	5.381	0.568	0.666	0.818
0.350	1.816	6.250	1.222	5.116	0.599	0.731	0.824
0.400	1.962	6.193	1.282	4.832	0.629	0.806	0.830
0.450	2.131	6.136	1.357	4.521	0.660	0.896	0.836
0.500	2.362	6.080	1.476	4.119	0.699	1.031	0.844
0.600	2.773	6.023	1.718	3.505	0.757	1.301	0.861
0.700	3.276	5.966	2.064	2.890	0.812	1.676	0.880
0.800	3.895	5.966	2.582	2.311	0.863	2.229	0.901
0.900	4.428	5.966	3.068	1.944	0.900	2.762	0.923
1.000	4.821	5.795	3.324	1.744	0.928	3.085	0.949
1.100	4.920	5.568	3.212	1.734	0.945	3.033	0.974
1.200	4.934	5.000	2.845	1.757	0.954	2.713	0.991
1.300	5.099	3.750	2.235	1.678	0.963	2.152	0.999
1.400	5.253	3.125	1.957	1.597	0.968	1.894	1.000
1.500	5.428	2.841	1.881	1.510	0.972	1.830	1.000
1.600	5.428	2.841	1.881	1.510	0.972	1.830	1.000
1.700	5.430	2.898	1.920	1.509	0.973	1.867	1.000
1.800	5.329	3.068	1.969	1.558	0.970	1.910	1.000
1.900	5.218	3.295	2.040	1.615	0.967	1.972	1.000
2.000	5.118	3.523	2.112	1.668	0.964	2.035	1.000
2.100	4.954	3.864	2.193	1.762	0.959	2.102	1.000
2.200	4.890	4.091	2.272	1.800	0.956	2.174	1.000
2.300	4.758	4.432	2.354	1.883	0.952	2.241	1.000
2.400	4.642	4.773	2.435	1.960	0.948	2.307	1.000
2.500	4.539	5.114	2.516	2.032	0.944	2.374	1.000
2.600	4.415	5.511	2.594	2.125	0.938	2.434	1.000
2.700	4.326	5.852	2.667	2.195	0.934	2.491	1.000
2.800	4.265	6.136	2.734	2.244	0.932	2.547	1.000
2.900	4.259	6.250	2.778	2.249	0.931	2.587	1.000
3.000	4.272	6.307	2.817	2.238	0.932	2.625	1.000
3.100	4.305	6.307	2.852	2.212	0.933	2.662	1.000
3.200	4.321	6.307	2.869	2.199	0.934	2.679	1.000
3.300	4.475	4.545	2.186	2.080	0.941	2.056	1.000
3.400	4.735	3.409	1.796	1.898	0.951	1.708	1.000
3.500	4.731	3.182	1.674	1.900	0.951	1.592	1.000

1.400	4.223	6.500	2.843	2.286	0.931	2.647	1.003
1.500	4.310	6.477	2.912	2.225	0.937	2.729	1.007
1.600	4.381	6.443	2.969	2.170	0.941	2.794	1.009
1.700	4.436	6.398	3.014	2.123	0.942	2.840	1.006
1.800	4.483	6.341	3.049	2.080	0.943	2.874	1.003
1.900	4.524	6.273	3.069	2.044	0.943	2.894	1.000
2.000	4.557	6.182	3.061	2.020	0.944	2.890	1.000
2.100	4.563	6.102	3.028	2.015	0.944	2.860	1.000
2.200	4.559	6.011	2.978	2.019	0.944	2.812	1.000
2.300	4.570	5.898	2.934	2.010	0.945	2.772	1.000
2.400	4.588	5.750	2.878	1.998	0.945	2.721	1.000
2.500	4.645	5.511	2.814	1.958	0.948	2.667	1.000
2.600	4.727	5.227	2.747	1.903	0.951	2.612	1.000
2.700	4.789	5.000	2.684	1.863	0.953	2.558	1.000
2.800	5.043	4.432	2.591	1.710	0.961	2.491	1.000
2.900	5.201	3.864	2.379	1.624	0.966	2.299	1.000
3.000	5.193	3.068	1.885	1.628	0.966	1.821	1.000
3.100	5.111	2.500	1.495	1.672	0.964	1.440	1.000
3.200	5.005	2.432	1.404	1.732	0.960	1.348	1.000
3.300	5.005	2.432	1.404	1.732	0.960	1.348	1.000
3.400	4.981	2.455	1.406	1.746	0.960	1.349	1.000
3.500	4.958	2.477	1.408	1.760	0.959	1.350	1.000

15 DEGREE SHOCK WAVE GENERATOR, x = 60.0cm

Y(CM)	M	P / Pinf	RHO / RHOinf	T / Tinf	U / Uinf	RHOU / RHOUinf	TT / TTinf
0.000	0.000	4.091	0.924	4.426	0.000	0.000	0.432
0.050	2.240	4.091	1.016	4.025	0.655	0.666	0.784
0.075	2.556	4.091	1.111	3.682	0.715	0.794	0.824
0.100	2.680	4.091	1.133	3.612	0.742	0.841	0.852
0.125	2.712	4.091	1.118	3.660	0.756	0.845	0.875
0.150	2.743	4.091	1.118	3.659	0.765	0.855	0.886
0.175	2.787	4.091	1.124	3.639	0.775	0.871	0.898
0.200	2.855	4.091	1.143	3.579	0.788	0.900	0.909
0.250	2.912	4.091	1.149	3.562	0.801	0.920	0.926
0.300	3.000	4.034	1.164	3.467	0.814	0.947	0.936
0.350	3.068	4.034	1.187	3.398	0.824	0.979	0.944
0.400	3.114	4.034	1.202	3.357	0.832	1.000	0.951
0.450	3.177	4.034	1.227	3.288	0.840	1.030	0.956
0.500	3.239	4.000	1.243	3.219	0.847	1.053	0.960
0.600	3.343	3.977	1.280	3.108	0.859	1.099	0.968
0.700	3.408	3.977	1.306	3.046	0.867	1.132	0.974
0.800	3.479	3.977	1.336	2.977	0.875	1.269	0.980
0.900	3.582	3.920	1.367	2.867	0.884	1.209	0.983
1.000	3.656	3.920	1.404	2.793	0.891	1.250	0.986
1.100	3.733	3.920	1.442	2.719	0.897	1.294	0.990
1.200	3.830	3.864	1.472	2.624	0.904	1.332	0.992
1.300	3.918	3.864	1.520	2.542	0.911	1.384	0.994
1.400	3.996	3.864	1.564	2.471	0.916	1.432	0.996
1.500	4.118	3.807	1.611	2.363	0.923	1.487	0.997
1.600	4.196	3.807	1.656	2.298	0.927	1.536	0.998
1.700	1.272	3.807	1.702	2.237	0.932	1.585	0.999
1.800	4.378	3.750	1.742	2.153	0.937	1.631	1.000
1.900	4.451	3.750	1.787	2.098	0.940	1.680	1.000
2.000	4.511	3.750	1.826	2.053	0.942	1.721	1.000
2.100	4.604	3.693	1.859	1.987	0.946	1.759	1.000
2.200	4.658	3.693	1.894	1.950	0.948	1.796	1.000
2.300	4.706	3.693	1.927	1.917	0.950	1.830	1.000
2.400	4.789	3.636	1.952	1.863	0.953	1.860	1.000
2.500	4.820	3.636	1.972	1.844	0.954	1.882	1.000
2.600	4.848	3.636	1.991	1.826	0.955	1.902	1.000
2.700	4.904	3.580	1.998	1.792	0.957	1.912	1.000
2.800	4.922	3.580	2.010	1.781	0.958	1.925	1.000
2.900	4.929	3.580	2.015	1.777	0.958	1.930	1.000
3.000	4.969	3.523	2.010	1.753	0.959	1.928	1.000
3.100	4.969	3.523	2.010	1.753	0.959	1.928	1.000
3.200	4.969	3.523	2.010	1.753	0.959	1.928	1.000
3.300	4.957	3.523	2.001	1.760	0.959	1.919	1.000
3.400	4.985	3.466	1.988	1.744	0.960	1.908	1.000
3.500	4.972	3.466	1.979	1.751	0.959	1.899	1.000

15 DEGREE SHOCK WAVE GENERATOR, x = 42.5cm

Y(CM)	M	P / Pinf	RHO / RHOinf	T / Tinf	U / Uinf	RHOU / RHOUinf	TT / TTinf
0.000	0.000	9.432	2.131	4.426	0.000	0.000	0.432
0.050	1.368	9.284	1.481	6.268	0.498	0.738	0.835
0.075	1.429	9.216	1.460	6.313	0.522	0.762	0.861
0.100	1.450	9.148	1.445	6.332	0.531	0.767	0.870
0.125	1.488	9.080	1.440	6.304	0.543	0.783	0.880
0.150	1.525	9.000	1.439	6.256	0.555	0.798	0.886
0.175	1.568	8.932	1.444	6.187	0.567	0.819	0.892
0.200	1.626	8.864	1.458	6.079	0.583	0.850	0.898
0.250	1.733	8.716	1.484	5.874	0.611	0.907	0.908
0.300	1.836	8.580	1.514	5.665	0.636	0.963	0.915
0.350	1.945	8.477	1.554	5.455	0.662	1.028	0.924
0.400	2.063	.8.375	1.604	5.222	0.687	1.102	0.932
0.450	2.190	8.273	1.657	4.991	0.713	1.182	0.943
0.500	2.335	8.182	1.732	4.724	0.739	1.281	0.951
0.600	2.669	8.011	1.926	4.160	0.793	1.528	0.970
0.700	3.047	7.864	2.194	3.584	0.841	1.845	0.985
0.800	3.547	7.705	2.602	2.961	0.890	2.315	1.000
0.900	4.037	7.523	3.033	2.480	0.927	2.811	1.014
1.000	4.348	7.330	3.268	2.242	0.949	3.103	1.028
1.100	4.499	7.068	3.324	2.126	0.956	3.180	1.030
1.200	4.588	6.761	2.385	2.058	0.960	3.152	1.028
1.300	4.613	6.364	3.130	2.033	0.959	3.001	1.025
1.400	4.597	5.625	2.775	2.027	0.954	2.648	1.017
1.500	4.641	4.432	2.245	1.974	9.951	2.135	1.006
1.600	4.690	3.750	1.945	1.928	0.949	1.847	1.000
1.700	4.873	3.295	1.820	1.811	0.956	1.740	1.000
1.800	5.063	2.955	1.739	1.699	0.962	1.673	1.000
1.900	5.135	2.841	1.712	1.660	0.964	1.650	1.000
2.000	5.164	2.841	1.729	1.643	0.965	1.668	1.000
2.100	5.194	2.841	1.746	1.628	0.966	1.686	1.000
2.200	5.121	2.955	1.773	1.667	0.964	1.709	1.000
2.300	5.053	3.068	1.800	1.705	0.962	1.731	1.000
2.400	4.988	3.182	1.827	1.742	0.960	1.753	1.000
2.500	4.927	3.295	1.854	1.778	0.958	1.775	1.000
2.600	4.867	3.432	1.891	1.814	0.956	1.808	1.000
2.700	4.789	3.580	1.921	1.863	0.953	1.831	1.000
2.800	4.752	3.693	1.957	1.887	0.952	1.863	1.000
2.900	4.709	3.807	1.988	1.915	0.950	1.888	1.000
3.000	4.658	3.929	2.011	1.949	0.948	1.907	1.000
3.100	4.620	4.034	2.042	1.976	0.947	1.933	1.000
3.200	4.585	4.148	2.074	2.000	0.945	1.961	1.000
3.300	4.557	4.261	2.109	2.020	0.944	1.992	1.000
3.400	4.526	4.318	2.115	2.042	0.943	1.994	1.000
3.500	4.541	4.375	2.154	2.031	0.944	2.032	1.000

15 DEGREE SHOCK WAVE GENERATOR, x = 50.0cm

Y(CM)	M	P / Pinf	RHO / RHOinf	T / Tinf	U / Uinf	RHOU / RHOUinf	TT / TTinf
0.000	0.000	7.091	1.602	4.416	0.000	0.000	0.432
0.050	2.207	7.068	1.522	4.645	0.693	1.055	0.886
0.075	2.453	7.045	1.649	4.273	0.739	1.219	0.909
0.100	2.503	7.023	1.653	4.248	0.752	1.243	0.923
0.125	2.527	7.000	1.650	4.243	0.759	1.252	0.932
0.150	2.561	6.977	1.661	4.201	0.765	1.271	0.936
0.175	2.595	6.955	1.673	4.157	0.771	1.290	0.940
0.200	2.641	6.932	1.697	4.086	0.778	1.321	0.943
0.250	2.691	6.898	1.715	4.022	0.787	1.350	0.949
0.300	2.758	6.864	1.748	3.926	0.797	1.393	0.953
0.350	2.822	6.830	1.783	3.831	0.805	1.436	0.957
0.400	2.883	6.784	1.811	3.746	0.813	1.473	0.960
0.450	2.942	6.750	1.844	3.661	0.821	1.513	0.963
0.500	2.996	6.727	1.877	3.584	0.827	1.552	0.964
0.600	3.105	6.705	1.954	3.432	0.838	1.638	0.967
0.700	3.229	6.705	2.051	3.268	0.851	1.746	0.970
0.800	3.367	6.636	2.141	3.100	0.864	1.850	0.974
0.900	3.509	6.614	2.251	2.938	0.877	1.974	0.978
1.000	3.668	6.580	2.376	2.770	0.890	2.114	0.983
1.100	3.839	6.545	2.514	2.603	0.903	2.271	0.988
1.200	3.998	6.534	2.655	2.461	0.914	2.427	0.993
1.300	4.118	6.523	2.758	2.365	0.923	2.547	0.998

15 DEGREE SHOCK WAVE GENERATOR, x = 70.0cm

Y(CM)	M	P / Pinf	RHO / RHOinf	T / Tinf	U / Uinf	RHOU / RHOUinf	TT / TTinf
0.000	0.000	2.455	0.555	4.426	0.000	0.000	0.432
0.050	2.240	2.455	0.614	3.995	0.653	0.401	0.778
0.075	2.680	2.455	0.694	3.536	0.735	0.510	0.835
0.100	2.874	2.455	0.730	3.363	0.769	0.561	0.864
0.125	2.936	2.455	0.729	3.365	0.785	0.573	0.886
0.150	2.997	2.455	0.739	3.322	0.796	0.588	0.898
0.175	3.039	2.455	0.745	3.296	0.804	0.599	0.906
0.200	3.115	2.455	0.762	3.223	0.815	0.621	0.915
0.250	3.212	2.455	0.782	3.139	0.829	0.649	0.927
0.300	3.305	2.455	0.804	3.053	0.842	0.677	0.938
0.350	3.402	2.455	0.829	2.962	0.854	0.707	0.946
0.400	3.485	2.455	0.850	2.886	0.863	0.734	0.953
0.450	3.565	2.443	0.868	2.814	0.872	0.757	0.960
0.500	3.625	2.432	0.881	2.759	0.878	0.774	0.964
0.600	3.732	2.409	0.903	2.668	0.889	0.802	0.972
0.700	3.813	2.386	0.918	2.600	0.896	0.823	0.977
0.800	3.885	2.364	0.929	2.543	0.903	0.840	0.983
0.900	3.938	2.352	0.940	2.501	0.908	0.854	0.986
1.000	3.995	2.341	0.953	2.456	0.913	0.870	0.990
1.100	4.052	2.341	0.971	2.411	0.917	0.890	0.993
1.200	4.112	2.341	0.991	2.363	0.921	0.913	0.995
1.300	4.166	2.341	1.009	2.319	0.925	0.934	0.997
1.400	4.235	2.330	1.029	2.265	0.929	0.956	0.998
1.500	4.289	2.330	1.048	2.222	0.932	0.977	0.999
1.600	4.341	2.330	1.068	2.181	0.935	0.998	0.999
1.700	4.408	2.318	1.088	2.130	0.938	1.021	1.000
1.800	4.464	2.318	1.110	2.088	0.940	1.044	1.000
1.900	4.524	2.318	1.134	2.044	0.943	1.069	1.000
2.000	4.586	2.307	1.154	2.000	0.945	1.091	1.000
2.100	4.640	2.307	1.176	1.962	0.947	1.114	1.000
2.200	4.693	2.307	1.198	1.926	0.949	1.137	1.000
2.300	4.757	2.295	1.219	1.883	0.952	1.160	1.000
2.400	4.813	2.295	1.242	1.848	0.954	1.185	1.000
2.500	4.865	2.295	1.265	1.815	0.956	1.208	1.000
2.600	4.929	2.284	1.285	1.777	0.958	1.231	1.000
2.700	4.983	2.284	1.309	1.745	0.960	1.256	1.000
2.800	5.038	2.273	1.327	1.713	0.961	1.276	1.000
2.900	5.081	2.273	1.346	1.689	0.063	1.295	1.000
3.000	5.119	2.273	1.363	1.668	0.964	1.313	1.000
3.100	5.170	2.261	1.378	1.641	0.965	1.331	1.000
3.200	5.203	2.261	1.394	1.623	0.966	1.347	1.000
3.300	5.243	2.250	1.405	1.602	0.967	1.359	1.000
3.400	5.276	2.250	1.420	1.585	0.968	1.375	1.000
3.500	5.306	2.250	1.433	1.570	0.969	1.389	1.000

***************BOUNDARY-LAYER PARAMETERS THROUGH THE INTERACTION*******************

15 DEGREE SHOCK WAVE GENERATOR

x,cm	Delta	Delta*	theta	Delta*i	thetai
20.0	2.70	1.393	0.096	0.354	0.254
25.5	2.70	1.374	0.108	0.369	0.266
28.0	2.80	1.332	0.123	0.444	0.271
30.5	2.85	2.250	0.098	0.913	0.412
33.0	2.20	2.018	0.026	1.399	0.158
35.5	1.70	0.952	0.104	0.544	0.245
38.0	1.30	0.304	0.126	0.312	0.182
40.0	1.32	0.438	0.088	0.264	0.157
42.5	1.45	0.251	0.101	0.247	0.151
45.0	1.60	0.485	0.080	0.203	0.138
50.0	2.00	0.577	0.083	0.175	0.130
55.0	2.40	0.660	0.095	0.181	0.137
60.0	2.70	0.781	0.106	0.207	0.160
65.0	2.95	0.925	0.101	0.207	0.160
70.0	3.10	0.897	0.098	0.191	0.148
75.0	3.25	0.861	0.099	0.190	0.146
85.0	3.40	1.020	0.106	0.224	0.171
95.0	3.50	0.919	0.117	0.235	0.178

***************************END OF FILE***

Ref.: 88, 29, 87
Author: Smits, A. J., *et al*
Geometry: 2-D Compression Corner
Mach number: 3
Data: p_{wall}, c_f, mean & fluctuating flowfield surveys (pitot and hot-wire anemometry)

Smits, A.J. and Muck, K.C., "Experimental Study of Three Shock Wave/Turbulent Boundary Layer Interactions," *Journal of Fluid Mechanics*, Vol. 182, Sept. 1987, pp. 291-314.

Fernholz, H.H., Finley, P.J., Dussauge, J.P. and Smits, A.J., "A Survey of Measurements and Measuring Techniques in Rapidly Distorted Compressible Turbulent Boundary Layers," *AGARDograph 315*, 1989.

Settles, G.S., Gilbert, R.B. and Bogdonoff, S.M., "Data Compilation For Shock Wave/Turbulent Boundary Layer Interaction Experiments On Two-Dimensional Compression Corners," *Princeton University Report 1489-MAE*, Princeton Univ. 1980.

The data consist of both mean and fluctuation surveys of flow properties before and after two-dimensional compression corners at Mach numbers in the vicinity of 2.9. Compression corner angles of 8, 16, 20, and 24 degrees span the range from attached flow to large boundary-layer separation. Two-dimensionality of the experiments was demonstrated by studies of spanwise oil-flow patterns for all but the largest compression corner angle, where significant 3-D perturbations were observed.

The mean data include surface pressure and skin friction distributions, as well as pitot and static pressure distributions from which velocity and Mach number were deduced (the total temperature distribution through these interactions was nearly constant). The fluctuation data are derived from constant-temperature hot-wire anemometer surveys using both normal and inclined wires, and yielding both mass-flux fluctuation and Reynolds shear-stress profiles.

All units in the tables are SI. The x-coordinate is defined in the streamwise direction along the wind tunnel floor and compression corner surfaces. Thus locations upstream of the corner have negative x-values and those downstream have positive values. The compression corners were all located at 1.205 m downstream of the wind tunnel nozzle exit with the exception of the 24 degree corner for hot-wire measurements only, which was located 1.17 m downstream of the nozzle exit. The y-coordinate is measured upward from the test surface with its origin at that surface. The origin of the z-coordinate is on the wind tunnel centerline. It is taken positive to the left when looking downstream.

Some difficulties arose purely insofar as the data were taken by several different experimenters over a period of several years. For example, the mean survey locations did not always match those of the hot-wire, requiring some interpolation in order to reduce the latter data.

These data have already been presented to the research community in tabulated form, first in the data tapes of the 1980-81 AFOSR-HTTM-Stanford Conference on Complex Turbulent Flows (mean data only), and more recently in the data tape accompanying AGARDograph 315 (Ref. 88). Nonetheless, on account of their high value for compressible turbulence modeling, we are including the full set of profiles here as well.

Nothing has been added to this dataset since the publication of Ref. 88, so that the current listing is a verbatim recount of these data. Users are highly encouraged to consult Refs. 88 and 29 for detailed discussions of the data and their significance, which are beyond the present scope, as well as estimates of the various errors and discrepancies which serve to set confidence limits upon the data.

```
*****************************MEAN-FLOW DATA**************************************
        SETTLES et al 2-D COMPRESSION CORNER INTERACTIONS (REF. 87)
*********************************************************************************
MODEL    A        B        C        D
Mref     2.87     2.85     2.79     2.84
alpha    8 deg    16 deg   20 deg   24 deg

*******************SURFACE-PRESSURE DISTRIBUTIONS*********************************

SECTION 2  8 DEGREE RAMP               SECTION 2  16 DEGREE RAMP
(Pinf=0.230E+05 Pascals)
X, cm        Pw/Pinf                   X, cm        Pw, Pascals

-2.54        1.00                      -.5080E-01   0.2663E+05
-2.54        1.00                      -.3810E-01   0.2251E+05
-2.54        1.00                      -.3810E-01   0.2143E+05
-1.02        1.00                      -.3810E-01   0.2150E+05
-1.02        1.00                      -.3810E-01   0.2197E+05
-0.51        1.00                      -.3810E-01   0.2190E+05
-0.25        1.02                      -.2222E-01   0.2143E+05
-0.25        1.02                      -.1905E-01   0.2136E+05
-0.25        1.02                      -.1588E-01   0.2143E+05
-0.24        1.03                      -.1270E-01   0.2170E+05
-0.18        1.06                      -.9525E-02   0.2163E+05
-0.12        1.13                      -.8731E-02   0.2177E+05
-0.06        1.22                      -.7938E-02   0.2210E+05
 0.0         1.34                      -.7144E-02   0.2291E+05
 0.0         1.33                      -.6350E-02   0.2426E+05
 0.0         1.37                      -.6350E-02   0.2487E+05
 0.0         1.37                      -.6350E-02   0.2514E+05
 0.06        1.42                      -.5556E-02   0.2663E+05
 0.12        1.45                      -.5556E-02   0.2730E+05
 0.18        1.46                      -.4763E-02   0.2966E+05
 0.24        1.48                      -.3969E-02   0.3210E+05
 0.25        1.47                      -.3175E-02   0.3432E+05
 0.38        1.47                      -.2381E-02   0.3567E+05
 0.51        1.47                      -.1587E-02   0.3689E+05
 0.76        1.48                      -.7937E-03   0.3823E+05
 1.02        1.49                      -.7937E-03   0.3864E+05
 1.52        1.52                      0.0000E+00   0.3938E+05
 2.03        1.55                      0.0000E+00   0.3945E+05
 2.54        1.58                      0.7937E-03   0.4100E+05
 2.54        1.58                      0.1587E-02   0.4255E+05
 2.54        1.57                      0.2381E-02   0.4377E+05
 2.54        1.55                      0.3175E-02   0.4498E+05
 3.56        1.60                      0.3969E-02   0.4586E+05
 4.57        1.65                      0.4763E-02   0.4687E+05
 5.08        1.67                      0.5556E-02   0.4762E+05
 5.59        1.68                      0.6350E-02   0.4802E+05
 6.60        1.70                      0.6350E-02   0.4822E+05
 7.62        1.70                      0.9525E-02   0.5005E+05
 7.62        1.70                      0.1270E-01   0.5180E+05
 8.64        1.71                      0.2222E-01   0.5565E+05
 9.65        1.72                      0.3810E-01   0.6085E+05
10.16        1.73                      0.3810E-01   0.6145E+05
10.67        1.73                      0.3810E-01   0.6024E+05
12.70        1.74                      0.5715E-01   0.6320E+05
12.70        1.74                      0.7620E-01   0.6280E+05
12.70        1.73                      0.1143       0.5747E+05
15.24        1.76                      0.1143       0.5889E+05

SECTION 2  20 DEGREE RAMP              SECTION 2  24 DEGREE RAMP

X, cm      Z, cm      Pw, Pascals      X, cm      Z, cm      Pw, Pascals

-.5080E-010.0000E+000.2174E+05         -.7620E-010.0000E+000.2013E+05
-.3810E-010.6350E-010.2200E+05         -.5588E-010.0000E+000.2082E+05
-.3810E-010.3810E-010.2168E+05         -.4572E-010.0000E+000.2214E+05
-.3810E-010.0000E+000.2181E+05         -.4064E-010.0000E+000.2722E+05
-.3810E-01-.2540E-010.2324E+05         -.3556E-010.0000E+000.3314E+05
-.3810E-01-.5080E-010.2226E+05         -.3556E-010.0000E+000.3362E+05
-.2699E-010.2540E-020.2265E+05         -.3556E-010.0000E+000.3438E+05
-.2381E-01-.2540E-020.2707E+05         -.3556E-010.0000E+000.3397E+05
-.2222E-010.2540E-020.3310E+05         -.3556E-010.0000E+000.3390E+05
-.2064E-01-.1778E-010.3707E+05         -.3302E-010.0000E+000.3599E+05
-.1905E-01-.2540E-020.3908E+05         -.2794E-010.0000E+000.3842E+05
-.1746E-01-.1524E-010.4005E+05         -.2286E-010.0000E+000.4065E+05
-.1588E-010.2540E-020.4031E+05         -.1778E-010.0000E+000.4260E+05
-.1429E-01-.1778E-010.4038E+05         -.1778E-010.0000E+000.4309E+05
-.1270E-010.0000E+000.4089E+05         -.1778E-010.0000E+000.4329E+05
-.1111E-01-.1524E-010.4109E+05         -.1778E-010.0000E+000.4315E+05
-.9525E-020.2540E-020.4129E+05         -.1270E-010.0000E+000.4475E+05
-.7938E-020.0000E+000.4129E+05         -.7620E-020.0000E+000.4642E+05
-.6350E-02-.7620E-020.4161E+05         -.2540E-020.0000E+000.4824E+05
-.6350E-02-.3810E-010.4187E+05         0.0000E+000.0000E+000.4935E+05
-.5556E-020.7620E-020.4226E+05         0.0000E+000.0000E+000.4997E+05
-.5556E-02-.1270E-010.4304E+05         0.0000E+000.0000E+000.4990E+05
-.4763E-020.5080E-020.4330E+05         0.0000E+000.0000E+000.5018E+05
-.3969E-020.2540E-020.4369E+05         0.0000E+000.0000E+000.5101E+05
-.3175E-020.0000E+000.4453E+05         0.5080E-020.0000E+000.5262E+05
-.2381E-02-.2540E-020.4479E+05         0.1016E-010.0000E+000.5756E+05
-.1587E-02-.7620E-020.4505E+05         0.1016E-010.0000E+000.5679E+05
-.7937E-030.1270E-010.4498E+05         0.1016E-010.0000E+000.5812E+05
-.7937E-03-.7620E-020.4551E+05         0.1016E-010.0000E+000.5749E+05
0.0000E+000.7620E-020.4615E+05         0.1778E-010.0000E+000.6313E+05
0.0000E+00-.1270E-010.4726E+05         0.2540E-010.0000E+000.6834E+05
0.7937E-030.5080E-020.4830E+05         0.3048E-010.0000E+000.7357E+05
0.1587E-020.2540E-020.4933E+05         0.3810E-010.0000E+000.7729E+05
0.3175E-02-.2540E-020.5011E+05         0.4572E-010.0000E+000.7908E+05
0.4763E-02-.7620E-020.5135E+05         0.5080E-010.0000E+000.7874E+05
0.6350E-020.3810E-010.5180E+05         0.5080E-010.0000E+000.8067E+05
0.6350E-02-.1778E-010.5187E+05         0.5080E-010.0000E+000.8074E+05
0.9525E-020.2540E-020.5518E+05         0.5080E-010.0000E+000.8156E+05
0.1270E-01-.2540E-020.5830E+05         0.5080E-010.0000E+000.8074E+05
0.2222E-010.2540E-020.6472E+05         0.6096E-010.0000E+000.8398E+05
0.3810E-010.3810E-010.7095E+05         0.7112E-010.0000E+000.8729E+05
0.3810E-010.0000E+000.7164E+05         0.8636E-010.0000E+000.8770E+05
0.3810E-01-.2540E-010.7150E+05         0.9652E-010.0000E+000.8956E+05
0.5715E-010.2540E-020.7501E+05         0.1067     0.0000E+000.9094E+05
0.7620E-01-.2540E-020.7715E+05         0.1168     0.0000E+000.9018E+05
0.1143     0.2540E-010.8032E+05         0.1270     0.0000E+000.8874E+05
0.1143     -.3810E-010.8081E+05
```

```
*******************************SKIN FRICTION DATA******************************

                 ALL UNITS ARE SYSTEM INTERNATIONAL

ALPHA=8 DEG RAMP, Z = -0.0127
```

XLOC	PT1	TT1	PRESTON	D	CF	RUN	TEST	TAUWAL	CFINF
-2.540E-02	6.894E+05	2.780E+02	5.605E+04	8.130E-04	1.014E-03	2380	1	1.335E+02	1.003E-03
-1.520E-02	6.894E+05	2.780E+02	5.564E+04	8.130E-04	1.004E-03	2380	1	1.322E+02	9.925E-04
-7.620E-03	6.894E+05	2.780E+02	5.543E+04	8.130E-04	9.988E-04	2380	1	1.315E+02	9.875E-04
-5.080E-03	6.894E+05	2.780E+02	5.246E+04	8.130E-04	9.331E-04	2380	1	1.229E+02	9.225E-04
-2.540E-03	6.894E+05	2.780E+02	5.295E+04	8.130E-04	9.321E-04	2380	1	1.237E+02	9.291E-04
0.000E+00	6.894E+05	2.780E+02	5.233E+04	8.130E-04	6.820E-04	2380	1	1.039E+02	7.800E-04
2.540E-03	6.894E+05	2.780E+02	5.501E+04	8.130E-04	6.342E-04	2380	1	1.021E+02	7.665E-04
5.080E-03	6.894E+05	2.780E+02	5.770E+04	8.130E-04	6.924E-04	2380	1	1.115E+02	8.369E-04
7.620E-03	6.894E+05	2.780E+02	6.025E+04	8.130E-04	7.449E-04	2380	1	1.199E+02	9.003E-04
1.020E-02	6.894E+05	2.780E+02	6.260E+04	8.130E-04	7.755E-04	2380	1	1.258E+02	9.447E-04
1.520E-02	6.894E+05	2.780E+02	6.646E+04	8.130E-04	8.316E-04	2380	1	1.360E+02	1.021E-03
2.030E-02	6.894E+05	2.780E+02	6.956E+04	8.130E-04	8.883E-04	2380	1	1.452E+02	1.091E-03
2.540E-02	6.894E+05	2.780E+02	7.342E+04	8.130E-04	9.292E-04	2380	1	1.543E+02	1.159E-03
3.050E-02	6.894E+05	2.780E+02	7.583E+04	8.130E-04	9.556E-04	2380	1	1.599E+02	1.201E-03
3.560E-02	6.894E+05	2.780E+02	7.790E+04	8.130E-04	9.714E-04	2380	1	1.638E+02	1.230E-03
4.060E-02	6.894E+05	2.780E+02	7.928E+04	8.130E-04	9.820E-04	2380	1	1.669E+02	1.253E-03
4.570E-02	6.894E+05	2.780E+02	8.142E+04	8.130E-04	1.015E-03	2380	1	1.726E+02	1.296E-03
5.080E-02	6.894E+05	2.780E+02	8.356E+04	8.130E-04	1.032E-03	2380	1	1.767E+02	1.327E-03
5.590E-02	6.894E+05	2.780E+02	8.466E+04	8.130E-04	1.049E-03	2380	1	1.796E+02	1.349E-03
6.600E-02	6.894E+05	2.780E+02	8.549E+04	8.130E-04	1.049E-03	2380	1	1.810E+02	1.359E-03
7.620E-02	6.894E+05	2.780E+02	8.831E+04	8.130E-04	1.095E-03	2380	1	1.890E+02	1.419E-03
8.640E-02	6.894E+05	2.780E+02	8.990E+04	8.130E-04	1.101E-03	2380	1	1.914E+02	1.437E-03
9.650E-02	6.894E+05	2.780E+02	9.300E+04	8.130E-04	1.148E-03	2380	1	1.996E+02	1.499E-03

1.070E-01	6.894E+05	2.780E+02	9.300E+04	8.130E-04	1.130E-03	2380	1	1.980E+02	1.487E-03
1.170E-01	6.894E+05	2.780E+02	9.424E+04	8.130E-04	1.154E-03	2380	1	2.022E+02	1.518E-03
1.270E-01	6.894E+05	2.780E+02	9.424E+04	8.130E-04	1.154E-03	2380	1	2.022E+02	1.518E-03
1.370E-01	6.894E+05	2.780E+02	9.645E+04	8.130E-04	1.184E-03	2380	1	2.075E+02	1.558E-03

ALPHA=16 DEG RAMP, Z = - 0.0127

XLOC	PT1	TT1	PRESTON	D	CF	RUN	TEST	TAUWAL	CFINF
-3.810E-02	6.894E+05	2.650E+02	5.749E+04	8.380E-04	1.016E-03	2572	1	1.338E+02	9.835E-04
-2.540E-02	6.894E+05	2.650E+02	5.749E+04	8.380E-04	1.016E-03	2572	1	1.338E+02	9.835E-04
-1.270E-02	6.894E+05	2.650E+02	5.904E+04	8.380E-04	1.052E-03	2572	1	1.385E+02	1.018E-03
-9.530E-03	6.894E+05	2.650E+02	5.475E+04	8.380E-04	9.607E-04	2572	1	1.265E+02	9.299E-04
-6.350E-03	6.894E+05	2.650E+02	4.437E+04	8.380E-04	5.799E-04	2572	1	8.351E+01	6.139E-04
-3.180E-03	6.894E+05	2.650E+02	3.494E+04	8.380E-04	2.140E-05	2572	1	3.498E+00	2.572E-05
0.000E+00	6.894E+05	2.650E+02	4.561E+04	8.380E-04	1.852E-04	2572	1	3.270E+01	2.404E-04
3.180E-03	6.894E+05	2.650E+02	5.141E+04	8.380E-04	1.864E-04	2572	1	3.493E+01	2.568E-04
6.350E-03	6.894E+05	2.650E+02	6.241E+04	8.380E-04	3.725E-04	2572	1	7.186E+01	5.282E-04
9.530E-03	6.894E+05	2.650E+02	7.046E+04	8.380E-04	4.826E-04	2572	1	9.512E+01	6.993E-04
1.270E-02	6.894E+05	2.650E+02	7.516E+04	8.380E-04	5.347E-04	2572	1	1.069E+02	7.858E-04
1.910E-02	6.894E+05	2.650E+02	8.686E+04	8.380E-04	6.801E-04	2572	1	1.388E+02	1.021E-03
2.540E-02	6.894E+05	2.650E+02	9.204E+04	8.380E-04	7.068E-04	2572	1	1.473E+02	1.083E-03
3.810E-02	6.894E+05	2.650E+02	1.027E+05	8.380E-04	8.128E-04	2572	1	1.729E+02	1.271E-03
5.080E-02	6.894E+05	2.650E+02	1.129E+05	8.380E-04	9.155E-04	2572	1	1.973E+02	1.451E-03
7.620E-02	6.894E+05	2.650E+02	1.285E+05	8.380E-04	1.074E-03	2572	1	2.346E+02	1.725E-03
1.020E-01	6.894E+05	2.650E+02	1.379E+05	8.380E-04	1.178E-03	2572	1	2.574E+02	1.892E-03
1.270E-01	6.894E+05	2.650E+02	1.441E+05	8.380E-04	1.252E-03	2572	1	2.735E+02	2.011E-03
1.400E-01	6.894E+05	2.650E+02	1.484E+05	8.380E-04	1.293E-03	2572	1	2.825E+02	2.077E-03

ALPHA=20 DEG RAMP, Z = -0.0127

XLOC	PT1	TT1	PRESTON	D	CF	RUN	TEST	TAUWAL	CFINF
-3.810E-02	6.894E+05	2.670E+02	6.010E+04	8.130E-04	1.067E-03	2305	1	1.417E+02	9.968E-04
-2.220E-02	6.894E+05	2.670E+02	5.840E+04	8.130E-04	8.531E-04	2305	1	1.258E+02	8.854E-04
-1.910E-02	6.894E+05	2.670E+02	5.120E+04	8.130E-04	4.935E-04	2305	1	8.131E+01	5.721E-04
-1.590E-02	6.894E+05	2.670E+02	4.620E+04	8.130E-04	2.620E-04	2305	1	4.521E+01	3.181E-04
-1.270E-02	6.894E+05	2.670E+02	4.400E+04	8.130E-04	1.156E-04	2305	1	2.056E+01	1.447E-04
-1.110E-02	6.894E+05	2.670E+02	4.450E+04	8.130E-04	1.101E-04	2305	1	1.973E+01	1.388E-04
3.970E-03	6.894E+05	2.670E+02	5.170E+04	8.130E-04	5.743E-05	2305	1	1.124E+01	7.907E-05
6.350E-03	6.894E+05	2.670E+02	5.670E+04	8.130E-04	8.338E-05	2305	1	1.690E+01	1.189E-04
9.530E-03	6.894E+05	2.670E+02	6.330E+04	8.130E-04	1.876E-04	2305	1	3.883E+01	2.732E-04
1.270E-02	6.894E+05	2.670E+02	6.840E+04	8.130E-04	2.153E-04	2305	1	4.580E+01	3.222E-04
1.590E-02	6.894E+05	2.670E+02	7.450E+04	8.130E-04	3.465E-04	2305	1	7.370E+01	5.185E-04
1.910E-02	6.894E+05	2.670E+02	7.997E+04	8.130E-04	3.686E-04	2305	1	8.051E+01	5.665E-04
2.220E-02	6.894E+05	2.670E+02	8.520E+04	8.130E-04	4.012E-04	2305	1	8.936E+01	6.287E-04
2.540E-02	6.894E+05	2.670E+02	8.955E+04	8.130E-04	4.354E-04	2305	1	9.822E+01	6.911E-04
3.180E-02	6.894E+05	2.670E+02	9.790E+04	8.130E-04	5.137E-04	2305	1	1.181E+02	8.308E-04
4.130E-02	6.894E+05	2.670E+02	1.031E+05	8.130E-04	5.746E-04	2305	1	1.329E+02	9.351E-04
4.450E-02	6.894E+05	2.670E+02	1.158E+05	8.130E-04	6.992E-04	2305	1	1.647E+02	1.159E-03
5.720E-02	6.894E+05	2.670E+02	1.241E+05	8.130E-04	7.489E-04	2305	1	1.796E+02	1.263E-03
7.620E-02	6.894E+05	2.670E+02	1.400E+05	8.130E-04	9.302E-04	2305	1	2.243E+02	1.578E-03
9.530E-02	6.894E+05	2.670E+02	1.510E+05	8.130E-04	1.057E-03	2305	1	2.550E+02	1.794E-03
1.140E-01	6.894E+05	2.670E+02	1.579E+05	8.130E-04	1.130E-03	2305	1	2.726E+02	1.918E-03

ALPHA=24 DEG RAMP

XLOC	PT1	TT1	PRESTON	D	CF	RUN	TEST	TAUWAL	CFINF
-6.350E-02	6.894E+05	2.620E+02	6.949E+04	1.570E-03	1.050E-03	972	1	1.406E+02	1.034E-03
-5.080E-02	6.894E+05	2.620E+02	6.970E+04	1.570E-03	1.050E-03	972	1	1.406E+02	1.034E-03
-4.570E-02	6.894E+05	2.620E+02	5.970E+04	1.570E-03	8.815E-04	972	1	1.180E+02	8.676E-04
-4.320E-02	6.894E+05	2.620E+02	5.060E+04	1.570E-03	7.213E-04	972	1	9.654E+01	7.100E-04
-4.060E-02	6.894E+05	2.620E+02	4.880E+04	1.570E-03	6.854E-04	972	1	9.174E+01	6.746E-04
-3.810E-02	6.894E+05	2.620E+02	4.680E+04	1.570E-03	6.464E-04	972	1	8.652E+01	6.363E-04
-3.560E-02	6.894E+05	2.620E+02	4.640E+04	1.570E-03	6.388E-04	972	1	8.549E+01	6.287E-04
-3.300E-02	6.894E+05	2.620E+02	4.640E+04	1.570E-03	6.388E-04	972	1	8.549E+01	6.287E-04
1.020E-02	6.894E+05	2.620E+02	6.360E+04	1.570E-03	5.811E-05	972	1	1.244E+01	9.152E-05
1.520E-02	6.894E+05	2.620E+02	7.080E+04	1.570E-03	1.472E-04	972	1	3.216E+01	2.365E-04
2.030E-02	6.894E+05	2.620E+02	7.840E+04	1.570E-03	1.861E-04	972	1	4.197E+01	3.087E-04
3.050E-02	6.894E+05	2.620E+02	9.240E+04	1.570E-03	2.758E-04	972	1	6.496E+01	4.777E-04
5.080E-02	6.894E+05	2.620E+02	1.188E+05	1.570E-03	4.784E-04	972	1	1.180E+02	8.679E-04

6.100E-02	6.894E+05	2.620E+02	1.325E+05	1.570E-03	6.203E-04	972	1	1.539E+02	1.132E-03
1.090E-01	6.894E+05	2.620E+02	1.588E+05	1.570E-03	8.505E-04	972	1	2.133E+02	1.569E-03
1.020E-01	6.894E+05	2.620E+02	1.802E+05	1.570E-03	9.920E-04	972	1	2.528E+02	1.859E-03
1.220E-01	6.894E+05	2.620E+02	1.984E+05	1.570E-03	1.142E-03	972	1	2.910E+02	2.140E-03
1.420E-01	6.894E+05	2.620E+02	2.127E+05	1.570E-03	1.250E-03	972	1	3.185E+02	2.342E-03

********************************MEAN PROFILE DATA********************************

MEAN PROFILE TABULATION ALPHA = 8 DEG
SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL
X = -.2540E-01
Z = -.1270E-01
Stagnation Pressure pitot = 0.6804E+06
Stagnation Temperature pitot = 282.9
M ref = 2.870
U ref pitot = 594.9
P wall = 0.2300E+05
TAU wall preston = 133.5

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.7026E-03	2.060	0.9848	0.5630	1.083
0.8319E-03	2.519	0.9848	0.6292	1.250
0.9934E-03	2.780	0.9844	0.6607	1.335
0.1026E-02	3.010	0.9843	0.6847	1.402
0.1316E-02	3.204	0.9836	0.7037	1.458
0.1478E-02	3.313	0.9831	0.7130	1.487
0.1672E-02	3.487	0.9826	0.7289	1.536
0.1995E-02	3.639	0.9818	0.7413	1.575
0.2383E-02	3.834	0.9824	0.7565	1.625
0.2835E-02	3.996	0.9847	0.7665	1.660
0.3190E-02	4.176	0.9866	0.7784	1.703
0.3546E-02	4.387	0.9884	0.7909	1.749
0.3932E-02	4.552	0.9873	0.8016	1.789
0.4613E-02	4.713	0.9821	0.8110	1.825
0.5192E-02	4.909	0.9782	0.8250	1.874
0.5872E-02	5.096	0.9757	0.8353	1.917
0.6518E-02	5.348	0.9731	0.8483	1.974
0.7163E-02	5.470	0.9700	0.8545	2.002
0.7681E-02	5.709	0.9680	0.8651	2.051
0.8456E-02	5.883	0.9707	0.8698	2.080
0.9134E-02	6.057	0.9712	0.8782	2.115
0.9749E-02	6.243	0.9686	0.8863	2.151
0.1039E-01	6.400	0.9659	0.8940	2.186
0.1117E-01	6.578	0.9664	0.8997	2.214
0.1172E-01	6.809	0.9670	0.9082	2.257
0.1230E-01	7.004	0.9671	0.9149	2.292
0.1295E-01	7.226	0.9657	0.9227	2.335
0.1362E-01	7.409	0.9644	0.9277	2.363
0.1427E-01	7.600	0.9651	0.9340	2.398
0.1492E-01	7.835	0.9668	0.9402	2.434
0.1556E-01	7.939	0.9686	0.9425	2.448
0.1647E-01	8.096	0.9721	0.9458	2.469
0.1686E-01	8.404	0.9736	0.9540	2.519
0.1773E-01	8.683	0.9764	0.9591	2.554
0.1870E-01	8.943	0.9789	0.9642	2.597
0.1954E-01	9.117	0.9808	0.9668	2.618
0.2041E-01	9.417	0.9824	0.9733	2.660
0.2141E-01	9.709	0.9832	0.9797	2.703
0.2235E-01	10.03	0.9825	0.9868	2.752
0.2344E-01	10.15	0.9822	0.9886	2.766
0.2451E-01	10.16	0.9822	0.9880	2.766
0.2558E-01	10.49	0.9806	0.9939	2.816
0.2654E-01	10.62	0.9790	0.9956	2.837
0.2807E-01	10.66	0.9764	0.9965	2.851
0.2924E-01	10.71	0.9744	0.9973	2.859
0.3045E-01	10.74	0.9753	0.9973	2.859
0.3203E-01	10.76	0.9740	0.9972	2.866
0.3399E-01	10.75	0.9689	0.9987	2.873
0.3602E-01	10.78	0.9702	0.9982	2.873
0.3815E-01	10.84	0.9741	0.9987	2.880
0.4056E-01	10.76	0.9730	0.9973	2.866

0.4295E-01	10.73	0.9689	0.9981	2.873

MEAN PROFILE TABULATION ALPHA = 6 DEG
SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL

X		= 0.0000E+00
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6780E+06
Stagnation Temperature	pitot	= 238.6
M ref		= 2.870
U ref	pitot	= 546.4
P wall		= 0.3151E+05
TAU wall	preston	= 103.9

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.2485E-02	3.011	0.8296	0.7343	1.558
0.3099E-02	3.142	0.7885	0.7598	1.643
0.3846E-02	3.332	0.7535	0.7887	1.745
0.4816E-02	3.573	0.7311	0.8147	1.846
0.5786E-02	3.780	0.7204	0.8337	1.924
0.7341E-02	4.059	0.7168	0.8513	2.002
0.8054E-02	4.307	0.7152	0.8670	2.073
0.8961E-02	4.487	0.7130	0.8779	2.122
0.9898E-02	4.614	0.7119	0.8855	2.158
0.1064E-01	4.802	0.7113	0.8955	2.207
0.1181E-01	5.040	0.7119	0.9065	2.264
0.1255E-01	5.151	0.7122	0.9124	2.292
0.1336E-01	5.322	0.7122	0.9196	2.328
0.1420E-01	5.605	0.7116	0.9326	2.398
0.1521E-01	5.763	0.7100	0.9386	2.434
0.1637E-01	6.036	0.7120	0.9478	2.490
0.1744E-01	6.223	0.7150	0.9530	2.526
0.1874E-01	6.534	0.7165	0.9637	2.589
0.1990E-01	6.693	0.7175	0.9698	2.625
0.2081E-01	6.947	0.7172	0.9774	2.674
0.2178E-01	7.242	0.7169	0.9858	2.731
0.2291E-01	7.277	0.7178	0.9860	2.738
0.2405E-01	7.502	0.7187	0.9899	2.781
0.2521E-01	7.648	0.7192	0.9920	2.809
0.2657E-01	7.728	0.7197	0.9925	2.823
0.2784E-01	7.826	0.7185	0.9951	2.844
0.2941E-01	7.858	0.7171	0.9967	2.851
0.3078E-01	7.864	0.7160	0.9966	2.859
0.3241E-01	7.871	0.7157	0.9958	2.859
0.3396E-01	7.902	0.7158	0.9963	2.866
0.3548E-01	7.909	0.7159	0.9972	2.866
0.3701E-01	7.902	0.7157	0.9976	2.866
0.3846E-01	7.883	0.7147	0.9971	2.866
0.3990E-01	7.880	0.7133	0.9968	2.866
0.4145E-01	7.848	0.7124	0.9958	2.859
0.4285E-01	7.832	0.7096	0.9965	2.866
0.4409E-01	7.848	0.7067	0.9972	2.873
0.4478E-01	7.826	0.7057	0.9972	2.873
0.4478E-01	7.845	0.7057	0.9972	2.873

MEAN PROFILE TABULATION ALPHA = 6 DEG
SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL

X		= 0.2540E-02
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6816E+06
Stagnation Temperature	pitot	= 276.1
M ref		= 2.870
U ref	pitot	= 587.7
P wall		= 0.3381E+05
TAU wall	preston	= 102.1

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.2380E-02	2.990	0.9393	0.6946	1.437
0.3155E-02	3.141	0.9110	0.7171	1.508
0.3962E-02	3.292	0.8218	0.7601	1.650
0.4641E-02	3.390	0.7676	0.7871	1.745
0.5286E-02	3.463	0.7183	0.8100	1.832
0.6190E-02	3.597	0.6879	0.8316	1.917
0.7188E-02	3.798	0.6726	0.8523	2.002
0.8125E-02	4.017	0.6687	0.8681	2.073
0.9286E-02	4.247	0.6664	0.8809	2.136
0.1026E-01	4.437	0.6657	0.8934	2.193
0.1106E-01	4.558	0.6648	0.9003	2.221
0.1181E-01	4.729	0.6637	0.9113	2.271
0.1274E-01	4.883	0.6628	0.9188	2.313
0.1393E-01	5.102	0.6626	0.9284	2.370
0.1510E-01	5.413	0.6637	0.9400	2.441
0.1613E-01	5.608	0.6650	0.9462	2.483
0.1726E-01	5.791	0.6656	0.9523	2.526
0.1842E-01	6.051	0.6665	0.9609	2.582
0.1939E-01	6.241	0.6678	0.9670	2.625
0.2045E-01	6.528	0.6693	0.9755	2.682
0.2152E-01	6.602	0.6714	0.9776	2.696
0.2242E-01	6.809	0.6731	0.9834	2.738
0.2362E-01	6.957	0.6732	0.9861	2.766
0.2510E-01	7.110	0.6734	0.9898	2.802
0.2662E-01	7.300	0.6740	0.9944	2.837
0.2814E-01	7.308	0.6726	0.9951	2.844
0.2982E-01	7.394	0.6732	0.9967	2.859
0.3175E-01	7.406	0.6706	0.9966	2.866
0.3330E-01	7.424	0.6710	0.9964	2.866
0.3523E-01	7.456	0.6723	0.9977	2.873

MEAN PROFILE TABULATION ALPHA = 6 DEG
SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL

X		= 0.5080E-02
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6838E+06
Stagnation Temperature	pitot	= 272.1
M ref		= 2.870
U ref	pitot	= 583.5
P wall		= 0.3381E+05
TAU wall	preston	= 111.5

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.2348E-02	3.046	0.9583	0.6938	1.437
0.2736E-02	3.150	0.9498	0.7052	1.473
0.3122E-02	3.327	0.9454	0.7237	1.529
0.3607E-02	3.511	0.9385	0.7415	1.586
0.4026E-02	3.608	0.9279	0.7524	1.621
0.4415E-02	3.694	0.9078	0.7653	1.664
0.4963E-02	3.694	0.8694	0.7780	1.706
0.5575E-02	3.730	0.8121	0.7995	1.782
0.6190E-02	3.747	0.7529	0.8219	1.867
0.6673E-02	3.833	0.7234	0.8379	1.931
0.7188E-02	3.943	0.6996	0.8548	2.002
0.7963E-02	4.022	0.6830	0.8653	2.051
0.8611E-02	4.114	0.6735	0.8722	2.087
0.9352E-02	4.309	0.6675	0.8849	2.151
0.1006E-01	4.466	0.6668	0.8954	2.200
0.1074E-01	4.626	0.6669	0.9028	2.235
0.1138E-01	4.771	0.6656	0.9114	2.278
0.1200E-01	4.892	0.6641	0.9182	2.313
0.1271E-01	4.966	0.6626	0.9220	2.335
0.1355E-01	5.126	0.6617	0.9296	2.377
0.1452E-01	5.288	0.6618	0.9356	2.412
0.1526E-01	5.528	0.6634	0.9450	2.469
0.1590E-01	5.661	0.6648	0.9494	2.497
0.1674E-01	5.768	0.6658	0.9524	2.519
0.1729E-01	5.883	0.6663	0.9572	2.547
0.1816E-01	6.099	0.6669	0.9660	2.597
0.1881E-01	6.241	0.6671	0.9710	2.625
0.1939E-01	6.294	0.6674	0.9737	2.639
0.1981E-01	6.365	0.6678	0.9760	2.653
0.2052E-01	6.528	0.6698	0.9794	2.682
0.2120E-01	6.664	0.6717	0.9828	2.710
0.2178E-01	6.755	0.6733	0.9842	2.724

0.2259E-01	6.977	0.6743	0.9893	2.766
0.2336E-01	7.030	0.6752	0.9904	2.781
0.2430E-01	7.093	0.6755	0.9903	2.788
0.2520E-01	7.128	0.6747	0.9915	2.802
0.2604E-01	7.246	0.6741	0.9938	2.823
0.2700E-01	7.320	0.6745	0.9950	2.837
0.2804E-01	7.374	0.6750	0.9964	2.851
0.2916E-01	7.397	0.6757	0.9959	2.851
0.3012E-01	7.439	0.6758	0.9971	2.859
0.3147E-01	7.439	0.6745	0.9985	2.866
0.3269E-01	7.436	0.6754	0.9968	2.859
0.3416E-01	7.465	0.6776	0.9956	2.859
0.3612E-01	7.465	0.6799	0.9957	2.859
0.3787E-01	7.477	0.6797	0.9962	2.859
0.3975E-01	7.498	0.6793	0.9980	2.866

MEAN PROFILE TABULATION ALPHA = 8 DEG
SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL

X		= 0.1016E-01
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6822E+06
Stagnation Temperature	pitot	= 272.7
M ref		= 2.870
U ref	pitot	= 584.1
P wall		= 0.3427E+05
TAU wall	preston	= 125.8

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.2510E-02	3.192	0.9718	0.7028	1.466
0.2832E-02	3.344	0.9715	0.7167	1.508
0.3221E-02	3.379	0.9670	0.7210	1.522
0.3574E-02	3.560	0.9618	0.7375	1.575
0.3896E-02	3.729	0.9595	0.7513	1.621
0.4219E-02	3.826	0.9570	0.7583	1.646
0.4801E-02	3.974	0.9507	0.7701	1.689
0.5189E-02	4.111	0.9441	0.7818	1.731
0.5512E-02	4.190	0.9379	0.7888	1.756
0.5834E-02	4.275	0.9324	0.7962	1.782
0.6157E-02	4.421	0.9285	0.8058	1.818
0.6609E-02	4.497	0.9181	0.8134	1.846
0.7125E-02	4.578	0.8996	0.8244	1.889
0.7447E-02	4.517	0.8803	0.8260	1.896
0.7770E-02	4.546	0.8412	0.8399	1.952
0.8415E-02	4.500	0.7952	0.8514	2.002
0.8867E-02	4.517	0.7585	0.8642	2.058
0.9286E-02	4.485	0.7303	0.8720	2.094
0.9835E-02	4.584	0.7057	0.8858	2.158
0.1035E-01	4.637	0.6866	0.8960	2.207
0.1081E-01	4.756	0.6763	0.9060	2.257
0.1125E-01	4.856	0.6709	0.9128	2.292
0.1164E-01	4.990	0.6661	0.9208	2.335
0.1229E-01	4.978	0.6622	0.9205	2.335
0.1293E-01	5.171	0.6595	0.9308	2.391
0.1371E-01	5.363	0.6565	0.9393	2.441
0.1435E-01	5.404	0.6559	0.9414	2.455
0.1500E-01	5.605	0.6552	0.9495	2.505
0.1555E-01	5.693	0.6549	0.9528	2.526
0.1610E-01	5.754	0.6553	0.9548	2.540
0.1668E-01	5.897	0.6557	0.9593	2.568
0.1732E-01	6.067	0.6562	0.9659	2.611
0.1800E-01	6.186	0.6571	0.9691	2.632
0.1842E-01	6.294	0.6581	0.9723	2.653
0.1926E-01	6.428	0.6602	0.9766	2.682
0.2000E-01	6.566	0.6620	0.9809	2.710
0.2065E-01	6.697	0.6633	0.9842	2.731
0.2139E-01	6.735	0.6647	0.9853	2.738
0.2213E-01	6.819	0.6661	0.9861	2.752
0.2275E-01	6.942	0.6665	0.9891	2.781
0.2352E-01	7.029	0.6665	0.9897	2.795
0.2426E-01	7.053	0.6665	0.9897	2.802
0.2488E-01	7.132	0.6665	0.9917	2.816

0.2583E-01	7.202	0.6666	0.9938	2.830
0.2682E-01	7.234	0.6667	0.9950	2.837
0.2791E-01	7.245	0.6660	0.9954	2.844
0.2962E-01	7.275	0.6652	0.9955	2.851
0.3165E-01	7.307	0.6665	0.9951	2.851
0.3393E-01	7.286	0.6659	0.9947	2.851
0.3630E-01	7.266	0.6650	0.9951	2.851
0.3868E-01	7.304	0.6654	0.9973	2.859
0.4102E-01	7.330	0.6661	0.9965	2.859

MEAN PROFILE TABULATION ALPHA = 8 DEG
SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL

X		= 0.2540E-01
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6822E+06
Stagnation Temperature	pitot	= 272.1
M ref		= 2.870
U ref	pitot	= 583.5
P wall		= 0.3565E+05
TAU wall	preston	= 154.3

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.2348E-02	3.173	0.9698	0.7013	1.462
0.2799E-02	3.310	0.9713	0.7126	1.497
0.3188E-02	3.405	0.9692	0.7213	1.526
0.3543E-02	3.534	0.9669	0.7321	1.561
0.3995E-02	3.624	0.9643	0.7404	1.589
0.4348E-02	3.798	0.9637	0.7528	1.632
0.4834E-02	3.969	0.9599	0.7661	1.678
0.5286E-02	4.076	0.9557	0.7752	1.710
0.5705E-02	4.261	0.9509	0.7890	1.759
0.6220E-02	4.387	0.9460	0.7989	1.797
0.6543E-02	4.544	0.9433	0.8080	1.832
0.7092E-02	4.634	0.9427	0.8129	1.853
0.7513E-02	4.825	0.9420	0.8232	1.896
0.7836E-02	4.912	0.9412	0.8285	1.917
0.8158E-02	5.097	0.9390	0.8394	1.959
0.8481E-02	5.189	0.9369	0.8449	1.981
0.9030E-02	5.307	0.9337	0.8522	2.009
0.9482E-02	5.445	0.9314	0.8592	2.037
0.9771E-02	5.579	0.9307	0.8653	2.066
0.1009E-01	5.734	0.9302	0.8728	2.101
0.1042E-01	5.820	0.9296	0.8755	2.115
0.1087E-01	5.978	0.9263	0.8827	2.151
0.1125E-01	6.115	0.9233	0.8901	2.186
0.1138E-01	6.132	0.9223	0.8901	2.186
0.1171E-01	6.261	0.9184	0.8960	2.214
0.1203E-01	6.325	0.9144	0.9003	2.235
0.1232E-01	6.550	0.9108	0.9101	2.285
0.1255E-01	6.527	0.9076	0.9102	2.285
0.1290E-01	6.597	0.9028	0.9130	2.299
0.1323E-01	6.583	0.8947	0.9158	2.313
0.1355E-01	6.555	0.8851	0.9173	2.320
0.1387E-01	6.468	0.8676	0.9187	2.328
0.1429E-01	6.452	0.8406	0.9254	2.363
0.1465E-01	6.295	0.7994	0.9318	2.398
0.1506E-01	6.199	0.7555	0.9406	2.448
0.1555E-01	6.143	0.7232	0.9491	2.497
0.1603E-01	6.126	0.6976	0.9561	2.540
0.1648E-01	6.121	0.6772	0.9617	2.575
0.1687E-01	6.182	0.6642	0.9683	2.618
0.1752E-01	6.258	0.6474	0.9759	2.674
0.1816E-01	6.328	0.6370	0.9800	2.710
0.1878E-01	6.429	0.6328	0.9845	2.745
0.1942E-01	6.474	0.6313	0.9868	2.759
0.2013E-01	6.606	0.6304	0.9912	2.788
0.2078E-01	6.628	0.6302	0.9917	2.795
0.2139E-01	6.743	0.6299	0.9937	2.816
0.2203E-01	6.760	0.6293	0.9936	2.823
0.2291E-01	6.791	0.6286	0.9938	2.830
0.2358E-01	6.872	0.6286	0.9960	2.851

0.2430E-01	6.909	0.6286	0.9963	2.859
0.2526E-01	6.934	0.6289	0.9966	2.866
0.2624E-01	6.937	0.6290	0.9968	2.866
0.2720E-01	6.948	0.6284	0.9976	2.866
0.2817E-01	6.959	0.6272	0.9987	2.873
0.2979E-01	6.942	0.6243	0.9983	2.873

MEAN PROFILE TABULATION
SURVEY NORMAL TO RAMP SURFACE-8 DEG OFF VERTICAL

X		= 0.4572E-01
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6859E+06
Stagnation Temperature	pitot	= 276.7
M ref		= 2.870
U ref	pitot	= 588.4
P wall		= 0.3795E+05
TAU wall	preston	= 172.6

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.4117E-03	2.018	1.007	0.5463	1.048
0.4117E-03	2.184	1.007	0.5746	1.115
0.6375E-03	2.293	1.003	0.5913	1.158
0.7343E-03	2.433	1.001	0.6108	1.207
0.1025E-02	2.549	0.9981	0.6269	1.250
0.1283E-02	2.693	0.9955	0.6452	1.299
0.1574E-02	2.764	0.9931	0.6526	1.320
0.1767E-02	2.859	0.9916	0.6640	1.352
0.2187E-02	2.986	0.9891	0.6772	1.391
0.2672E-02	3.115	0.9881	0.6900	1.430
0.3122E-02	3.281	0.9871	0.7048	1.476
0.3640E-02	3.415	0.9877	0.7157	1.512
0.4252E-02	3.555	0.9883	0.7263	1.547
0.4897E-02	3.729	0.9863	0.7399	1.593
0.5382E-02	3.881	0.9847	0.7512	1.632
0.5898E-02	4.061	0.9824	0.7647	1.678
0.6416E-02	4.221	0.9800	0.7770	1.720
0.6866E-02	4.350	0.9779	0.7861	1.752
0.7221E-02	4.408	0.9764	0.7901	1.766
0.7513E-02	4.688	0.9751	0.8078	1.832
0.8222E-02	4.854	0.9726	0.8171	1.867
0.8804E-02	4.941	0.9708	0.8227	1.889
0.9190E-02	5.065	0.9701	0.8299	1.917
0.9675E-02	5.181	0.9697	0.8352	1.938
0.1022E-01	5.412	0.9688	0.8471	1.988
0.1074E-01	5.626	0.9675	0.8584	2.037
0.1106E-01	5.676	0.9667	0.8598	2.044
0.1164E-01	5.823	0.9657	0.8659	2.073
0.1235E-01	6.042	0.9647	0.8751	2.115
0.1300E-01	6.148	0.9637	0.8800	2.136
0.1355E-01	6.335	0.9629	0.8893	2.179
0.1397E-01	6.474	0.9628	0.8939	2.200
0.1452E-01	6.627	0.9628	0.8996	2.228
0.1523E-01	6.896	0.9627	0.9090	2.278
0.1581E-01	7.104	0.9623	0.9155	2.313
0.1616E-01	7.212	0.9621	0.9194	2.335
0.1658E-01	7.333	0.9613	0.9231	2.356
0.1694E-01	7.510	0.9603	0.9281	2.384
0.1723E-01	7.486	0.9596	0.9279	2.384
0.1771E-01	7.597	0.9574	0.9315	2.405
0.1807E-01	7.652	0.9541	0.9338	2.420
0.1839E-01	7.781	0.9511	0.9386	2.448
0.1884E-01	7.808	0.9411	0.9408	2.462
0.1929E-01	7.897	0.9149	0.9498	2.519
0.1978E-01	7.821	0.8780	0.9561	2.561
0.2036E-01	7.544	0.8117	0.9642	2.618
0.2049E-01	7.381	0.7978	0.9629	2.611
0.2091E-01	7.159	0.7544	0.9678	2.646
0.2107E-01	6.867	0.7378	0.9632	2.618
0.2152E-01	6.711	0.6919	0.9718	2.674
0.2197E-01	6.582	0.6509	0.9812	2.738
0.2242E-01	6.509	0.6100	0.9922	2.816

0.2288E-01	6.498	0.5740	1.004	2.901

MEAN PROFILE TABULATION
SURVEY NORMAL TO RAMP SURFACE-8 DEG OFF VERTICAL

X		= 0.6604E-01
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6870E+06
Stagnation Temperature	pitot	= 281.9
M ref		= 2.870
U ref	pitot	= 593.9
P wall		= 0.3910E+05
TAU wall	preston	= 181.0

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.4440E-03	2.157	0.9579	0.5895	1.143
0.6375E-03	2.365	0.9608	0.6193	1.218
0.7991E-03	2.518	0.9627	0.6400	1.271
0.1089E-02	2.683	0.9641	0.6583	1.320
0.1444E-02	2.801	0.9638	0.6720	1.359
0.1735E-02	2.944	0.9636	0.6867	1.402
0.2025E-02	3.018	0.9635	0.6935	1.423
0.2380E-02	3.087	0.9639	0.7001	1.444
0.2962E-02	3.238	0.9646	0.7120	1.483
0.3607E-02	3.309	0.9653	0.7174	1.504
0.4252E-02	3.537	0.9662	0.7351	1.565
0.4641E-02	3.716	0.9667	0.7494	1.611
0.5415E-02	3.867	0.9664	0.7613	1.646
0.6157E-02	4.043	0.9648	0.7759	1.692
0.6835E-02	4.197	0.9635	0.7867	1.731
0.7447E-02	4.363	0.9640	0.7967	1.768
0.8222E-02	4.586	0.9645	0.8096	1.818
0.9126E-02	4.910	0.9653	0.8279	1.889
0.9835E-02	5.120	0.9659	0.8384	1.931
0.1068E-01	5.402	0.9667	0.8519	1.988
0.1145E-01	5.573	0.9669	0.8601	2.023
0.1235E-01	5.954	0.9671	0.8777	2.101
0.1319E-01	6.092	0.9670	0.8822	2.122
0.1384E-01	6.384	0.9666	0.8939	2.179
0.1465E-01	6.604	0.9662	0.9019	2.221
0.1535E-01	6.870	0.9660	0.9113	2.271
0.1629E-01	7.059	0.9660	0.9167	2.299
0.1713E-01	7.402	0.9650	0.9290	2.363
0.1790E-01	7.527	0.9636	0.9332	2.384
0.1875E-01	7.790	0.9621	0.9417	2.434
0.1962E-01	7.890	0.9608	0.9426	2.448
0.2049E-01	8.059	0.9595	0.9472	2.483
0.2129E-01	8.120	0.9584	0.9475	2.490
0.2229E-01	8.199	0.9573	0.9499	2.505
0.2310E-01	8.266	0.9564	0.9523	2.519
0.2397E-01	8.299	0.9526	0.9531	2.526
0.2491E-01	8.307	0.9481	0.9545	2.540
0.2598E-01	8.230	0.9071	0.9602	2.582
0.2682E-01	7.885	0.8243	0.9715	2.660
0.2731E-01	7.261	0.7625	0.9700	2.653
0.2784E-01	6.517	0.6631	0.9760	2.696
0.2860E-01	6.419	0.5700	1.003	2.894

MEAN PROFILE TABULATION
SURVEY NORMAL TO RAMP SURFACE-8 DEG OFF VERTICAL

X		= 0.1372
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6893E+06
Stagnation Temperature	pitot	= 280.1
M ref		= 2.870
U ref	pitot	= 592.0
P wall		= 0.4025E+05
TAU wall	preston	= 207.5

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.4115E-03	2.527	1.005	0.6271	1.235

0.1268E-01	8.093	1.068	0.9382	2.349
0.1345E-01	8.433	1.066	0.9491	2.405
0.1415E-01	8.484	1.068	0.9484	2.405
0.1487E-01	8.870	1.063	0.9592	2.469
0.1563E-01	9.093	1.067	0.9643	2.497
0.1634E-01	9.298	1.060	0.9721	2.540
0.1712E-01	9.516	1.066	0.9752	2.561
0.1799E-01	9.800	1.055	0.9833	2.618
0.1894E-01	10.04	1.063	0.9854	2.639
0.1983E-01	10.27	1.058	0.9922	2.682
0.2072E-01	10.42	1.057	0.9939	2.703
0.2161E-01	10.56	1.064	0.9934	2.710
0.2236E-01	10.92	1.051	1.003	2.774
0.2364E-01	11.09	1.060	1.005	2.788
0.2457E-01	11.20	1.058	1.004	2.802
0.2550E-01	11.23	1.060	1.004	2.802
0.2652E-01	11.27	1.061	1.005	2.809
0.2779E-01	11.49	1.064	1.007	2.830
0.2898E-01	11.54	1.069	1.006	2.830
0.3068E-01	11.61	1.076	1.006	2.830
0.3317E-01	11.61	1.066	1.008	2.844

MEAN PROFILE TABULATION ALPHA = 16 DEG
SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL

X		= -.1270E-01
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6915E+06
Stagnation Temperature	pitot	= 269.4
M ref		= 2.850
U ref	pitot	= 579.0
P wall		= 0.2170E+05
TAU wall	preston	= 138.5

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.5192E-03	3.007	1.073	0.6698	1.327
0.9144E-03	3.590	1.067	0.7206	1.487
0.1438E-02	3.934	1.068	0.7471	1.568
0.1863E-02	4.165	1.058	0.7674	1.632
0.2445E-02	4.486	1.058	0.7883	1.703
0.2891E-02	4.550	1.058	0.7917	1.717
0.3571E-02	4.935	1.058	0.8141	1.797
0.4173E-02	5.143	1.058	0.8253	1.839
0.4796E-02	5.323	1.057	0.8362	1.881
0.5418E-02	5.562	1.056	0.8467	1.924
0.6050E-02	5.783	1.046	0.8604	1.981
0.6673E-02	5.991	1.046	0.8685	2.016
0.7226E-02	6.074	1.045	0.8722	2.030
0.7917E-02	6.470	1.044	0.8900	2.108
0.8608E-02	6.502	1.048	0.8892	2.108
0.9299E-02	6.724	1.045	0.8989	2.151
0.9931E-02	6.977	1.043	0.9076	2.193
0.1066E-01	7.249	1.043	0.9177	2.243
0.1141E-01	7.479	1.037	0.9256	2.285
0.1197E-01	7.765	1.039	0.9341	2.328
0.1287E-01	7.825	1.045	0.9353	2.335
0.1372E-01	8.203	1.039	0.9469	2.398
0.1446E-01	8.401	1.040	0.9511	2.427
0.1530E-01	8.783	1.043	0.9615	2.483
0.1613E-01	8.917	1.045	0.9651	2.497
0.1693E-01	9.175	1.048	0.9707	2.533
0.1769E-01	9.410	1.049	0.9755	2.568
0.1846E-01	9.816	1.048	0.9826	2.625
0.1916E-01	10.06	1.046	0.9898	2.667
0.1987E-01	10.07	1.048	0.9891	2.660
0.2072E-01	10.25	1.053	0.9907	2.682
0.2145E-01	10.67	1.056	0.9985	2.738
0.2223E-01	10.79	1.057	1.000	2.752
0.2300E-01	10.88	1.057	1.001	2.759
0.2373E-01	10.99	1.057	1.003	2.774
0.2451E-01	11.01	1.057	1.002	2.781
0.2530E-01	11.29	1.052	1.007	2.823

0.5408E-03	2.636	1.005	0.6387	1.271
0.6053E-03	2.775	1.005	0.6537	1.313
0.8311E-03	2.894	1.003	0.6651	1.352
0.1154E-02	3.076	1.001	0.6839	1.405
0.1347E-02	3.183	0.9990	0.6949	1.437
0.1702E-02	3.359	0.9960	0.7128	1.490
0.2154E-02	3.411	0.9941	0.7173	1.504
0.2540E-02	3.610	0.9947	0.7335	1.558
0.3188E-02	3.675	0.9954	0.7363	1.572
0.3607E-02	3.764	0.9945	0.7440	1.596
0.4089E-02	3.851	0.9934	0.7514	1.618
0.4575E-02	3.953	0.9920	0.7597	1.643
0.5123E-02	4.065	0.9900	0.7674	1.671
0.5961E-02	4.229	0.9860	0.7782	1.713
0.6736E-02	4.365	0.9819	0.7877	1.749
0.7381E-02	4.554	0.9784	0.8006	1.797
0.8316E-02	4.703	0.9779	0.8099	1.832
0.9091E-02	4.924	0.9779	0.8230	1.881
0.9898E-02	5.193	0.9766	0.8376	1.938
0.1083E-01	5.436	0.9759	0.8493	1.988
0.1157E-01	5.684	0.9761	0.8604	2.037
0.1248E-01	5.814	0.9765	0.8646	2.058
0.1342E-01	6.042	0.9770	0.8745	2.101
0.1419E-01	6.437	0.9769	0.8915	2.179
0.1480E-01	6.651	0.9767	0.8991	2.214
0.1577E-01	6.825	0.9761	0.9063	2.250
0.1655E-01	7.130	0.9761	0.9160	2.299
0.1729E-01	7.158	0.9753	0.9172	2.306
0.1803E-01	7.434	0.9757	0.9261	2.356
0.1893E-01	7.414	0.9778	0.9242	2.349
0.1987E-01	7.804	0.9816	0.9342	2.405
0.2084E-01	7.853	0.9846	0.9351	2.412
0.2158E-01	8.042	0.9867	0.9398	2.441
0.2235E-01	8.067	0.9892	0.9392	2.441
0.2342E-01	8.216	0.9894	0.9420	2.462
0.2445E-01	8.276	0.9888	0.9439	2.476
0.2570E-01	8.343	0.9867	0.9459	2.490
0.2713E-01	8.283	0.9815	0.9440	2.483
0.2878E-01	8.320	0.9741	0.9467	2.505
0.3051E-01	8.281	0.9707	0.9457	2.497

MEAN PROFILE TABULATION ALPHA = 16 DEG
SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL

X		= -.3810E-01
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6909E+06
Stagnation Temperature	pitot	= 269.9
M ref		= 2.850
U ref	pitot	= 579.6
P wall		= 0.2150E+05
TAU wall	preston	= 133.8

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.6086E-03	3.540	1.092	0.7128	1.455
0.1083E-02	3.999	1.077	0.7502	1.579
0.1775E-02	4.390	1.082	0.7759	1.660
0.2250E-02	4.541	1.086	0.7855	1.692
0.2586E-02	4.744	1.094	0.7951	1.727
0.3368E-02	5.019	1.103	0.8079	1.775
0.3980E-02	5.293	1.085	0.8273	1.846
0.4564E-02	5.493	1.084	0.8364	1.881
0.5235E-02	5.670	1.082	0.8451	1.917
0.5956E-02	5.953	1.072	0.8605	1.981
0.6541E-02	6.270	1.079	0.8718	2.030
0.7330E-02	6.330	1.075	0.8771	2.051
0.8024E-02	6.563	1.073	0.8868	2.094
0.8755E-02	6.730	1.074	0.8907	2.115
0.9606E-02	7.149	1.067	0.9091	2.200
0.1038E-01	7.274	1.072	0.9121	2.214
0.1111E-01	7.470	1.070	0.9173	2.243
0.1187E-01	7.702	1.068	0.9257	2.285

MEAN PROFILE TABULATION
SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL

X		= 0.0000E+00
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6853E+06
Stagnation Temperature	pitot	= 276.5
M ref		= 2.850
U ref	pitot	= 586.6
P wall		= 0.3938E+05
TAU wall	preston	= 32.70

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.6680E-03	1.208	1.059	0.2519	0.4380
0.1097E-02	1.315	1.056	0.3217	0.5674
0.1518E-02	1.648	1.054	0.4524	0.8252
0.2064E-02	1.989	1.053	0.5317	0.9980
0.2453E-02	2.343	1.044	0.5920	1.140
0.3109E-02	2.715	1.025	0.6459	1.278
0.3498E-02	2.814	1.004	0.6642	1.327
0.4013E-02	3.093	0.9743	0.7019	1.434
0.4559E-02	3.276	0.9383	0.7319	1.522
0.5230E-02	3.347	0.8560	0.7636	1.625
0.5573E-02	3.390	0.8401	0.7736	1.657
0.6353E-02	3.415	0.8040	0.7869	1.706
0.7000E-02	3.415	0.7283	0.8151	1.804
0.7521E-02	3.446	0.7046	0.8255	1.846
0.8176E-02	3.530	0.6783	0.8418	1.910
0.8877E-02	3.593	0.6560	0.8554	1.966
0.9525E-02	3.753	0.6477	0.8703	2.030
0.1025E-01	3.847	0.6405	0.8796	2.073
0.1087E-01	3.944	0.6356	0.8879	2.108
0.1165E-01	4.002	0.6294	0.8943	2.136
0.1252E-01	4.167	0.6238	0.9059	2.193
0.1337E-01	4.294	0.6188	0.9161	2.243
0.1415E-01	4.429	0.6149	0.9246	2.285
0.1517E-01	4.548	0.6119	0.9302	2.320
0.1642E-01	4.837	0.6082	0.9470	2.412
0.1777E-01	4.995	0.6039	0.9554	2.462
0.1936E-01	5.272	0.5990	0.9691	2.540
0.2106E-01	5.559	0.5938	0.9810	2.625
0.2338E-01	5.653	0.5930	0.9806	2.653
0.2616E-01	6.026	0.5849	0.9954	2.759
0.2888E-01	6.196	0.5848	1.001	2.802
0.3106E-01	6.242	0.5848	1.003	2.816
0.3249E-01	6.242	0.5848	1.002	2.816
0.3434E-01	6.295	0.5848	1.004	2.830

MEAN PROFILE TABULATION
SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL

X		= 0.6350E-02
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6873E+06
Stagnation Temperature	pitot	= 276.2
M ref		= 2.850
U ref	pitot	= 586.3
P wall		= 0.4802E+05
TAU wall	preston	= 71.86

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.5121E-03	1.347	1.037	0.3550	0.6240
0.8867E-03	1.452	1.024	0.4047	0.7236
0.1183E-02	1.574	1.017	0.4489	0.8154
0.1581E-02	1.696	1.014	0.4836	0.8896
0.1956E-02	1.869	1.009	0.5253	0.9824
0.2275E-02	2.022	1.003	0.5567	1.055
0.2517E-02	2.128	0.9958	0.5761	1.101
0.2743E-02	2.218	0.9953	0.5907	1.136
0.3109E-02	2.376	0.9945	0.6142	1.193
0.3485E-02	2.530	0.9880	0.6373	1.253
0.3907E-02	2.693	0.9788	0.6593	1.313

0.2639E-01	11.18	1.045	1.006	2.816
0.2743E-01	11.41	1.041	1.011	2.851
0.2858E-01	11.41	1.044	1.010	2.851
0.2974E-01	11.45	1.048	1.009	2.851
0.3096E-01	11.49	1.049	1.010	2.851
0.3195E-01	11.49	1.048	1.009	2.851
0.3330E-01	11.49	1.046	1.010	2.859

MEAN PROFILE TABULATION ALPHA = 16 DEG
SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL

X		= -.6350E-02
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6885E+06
Stagnation Temperature	pitot	= 264.7
M ref		= 2.850
U ref	pitot	= 574.0
P wall		= 0.2426E+05
TAU wall	preston	= 83.51

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.4204E-03	2.462	1.108	0.5907	1.133
0.8946E-03	3.069	1.095	0.6654	1.327
0.1359E-02	3.462	1.084	0.7057	1.441
0.1882E-02	3.822	1.070	0.7390	1.540
0.2297E-02	3.996	1.057	0.7553	1.593
0.2781E-02	4.233	1.041	0.7771	1.664
0.3078E-02	4.345	1.036	0.7854	1.692
0.3551E-02	4.448	1.019	0.7965	1.731
0.3927E-02	4.650	1.002	0.8141	1.797
0.4341E-02	4.670	0.9863	0.8196	1.818
0.4757E-02	4.856	0.9695	0.8351	1.874
0.5319E-02	4.930	0.9632	0.8404	1.896
0.5763E-02	5.103	0.9602	0.8510	1.938
0.6238E-02	5.251	0.9495	0.8611	1.981
0.6772E-02	5.379	0.9504	0.8656	2.002
0.7295E-02	5.552	0.9507	0.8744	2.037
0.7818E-02	5.775	0.9445	0.8864	2.094
0.8392E-02	5.853	0.9467	0.8880	2.101
0.9004E-02	6.035	0.9444	0.8974	2.143
0.9685E-02	6.175	0.9436	0.9038	2.172
0.1039E-01	6.381	0.9412	0.9129	2.214
0.1108E-01	6.529	0.9408	0.9183	2.243
0.1171E-01	6.826	0.9449	0.9265	2.285
0.1237E-01	6.966	0.9369	0.9338	2.320
0.1303E-01	7.222	0.9367	0.9422	2.370
0.1364E-01	7.383	0.9387	0.9462	2.391
0.1431E-01	7.519	0.9405	0.9509	2.412
0.1493E-01	7.609	0.9355	0.9544	2.441
0.1569E-01	7.857	0.9415	0.9599	2.469
0.1630E-01	8.141	0.9424	0.9683	2.519
0.1691E-01	8.269	0.9371	0.9727	2.547
0.1766E-01	8.520	0.9433	0.9766	2.575
0.1833E-01	8.739	0.9455	0.9812	2.611
0.1898E-01	8.755	0.9437	0.9819	2.618
0.1974E-01	9.097	0.9441	0.9905	2.667
0.2036E-01	9.060	0.9453	0.9881	2.660
0.2112E-01	9.406	0.9412	0.9973	2.717
0.2179E-01	9.514	0.9389	0.9984	2.738
0.2255E-01	9.662	0.9435	1.001	2.752
0.2332E-01	9.847	0.9449	1.004	2.781
0.2410E-01	9.889	0.9436	1.004	2.788
0.2488E-01	9.930	0.9422	1.003	2.795
0.2563E-01	10.04	0.9393	1.006	2.816
0.2637E-01	9.930	0.9375	1.004	2.802
0.2728E-01	10.14	0.9424	1.007	2.823
0.2797E-01	10.09	0.9461	1.005	2.816
0.2896E-01	10.23	0.9444	1.008	2.837
0.3015E-01	10.24	0.9401	1.009	2.844
0.3132E-01	10.26	0.9410	1.008	2.844
0.3261E-01	10.26	0.9450	1.008	2.837

0.4389E-02	2.822	0.9675	0.6772	1.363
0.4796E-02	3.040	0.9571	0.7034	1.437
0.5161E-02	3.138	0.9445	0.7164	1.476
0.5730E-02	3.249	0.9158	0.7363	1.536
0.6276E-02	3.382	0.8798	0.7592	1.611
0.6746E-02	3.496	0.8323	0.7850	1.696
0.7369E-02	3.521	0.7738	0.8079	1.775
0.7932E-02	3.538	0.7102	0.8323	1.867
0.8539E-02	3.451	0.6492	0.8507	1.938
0.9017E-02	3.434	0.6120	0.8639	1.995
0.9741E-02	3.397	0.5702	0.8783	2.058
0.1026E-01	3.399	0.5500	0.8872	2.101
0.1099E-01	3.467	0.5308	0.9005	2.165
0.1175E-01	3.521	0.5219	0.9090	2.207
0.1253E-01	3.609	0.5137	0.9184	2.257
0.1338E-01	3.742	0.5096	0.9272	2.306
0.1416E-01	3.840	0.5071	0.9362	2.349
0.1494E-01	3.948	0.5049	0.9423	2.384
0.1572E-01	4.067	0.5029	0.9509	2.434
0.1656E-01	4.130	0.5027	0.9529	2.448
0.1759E-01	4.229	0.5024	0.9587	2.483
0.1859E-01	4.357	0.5014	0.9655	2.526
0.1946E-01	4.467	0.4993	0.9698	2.561
0.2024E-01	4.559	0.4975	0.9745	2.597
0.2110E-01	4.629	0.4955	0.9797	2.625
0.2204E-01	4.750	0.4930	0.9844	2.667
0.2297E-01	4.835	0.4904	0.9891	2.703
0.2474E-01	4.908	0.4796	0.9952	2.752
0.2779E-01	5.094	0.4796	1.002	2.809
0.3045E-01	5.117	0.4796	1.003	2.816
0.3383E-01	5.142	0.4796	1.003	2.823

MEAN PROFILE TABULATION
SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL

X		= 0.1905E-01
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6929E+06
Stagnation Temperature	pitot	= 269.9
M ref		= 2.850
U ref	pitot	= 579.6
P wall		= 0.5437E+05
TAU wall	preston	= 138.8

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.5354E-03	1.713	1.033	0.4819	0.8818
0.9723E-03	1.826	1.024	0.5114	0.9482
0.1440E-02	1.929	1.016	0.5348	1.002
0.1885E-02	2.010	1.008	0.5539	1.044
0.2204E-02	2.117	1.003	0.5725	1.090
0.2586E-02	2.226	0.9977	0.5913	1.136
0.3000E-02	2.334	0.9920	0.6097	1.182
0.3391E-02	2.446	0.9888	0.6247	1.221
0.3772E-02	2.553	0.9865	0.6396	1.260
0.4247E-02	2.676	0.9849	0.6551	1.303
0.4638E-02	2.867	0.9832	0.6769	1.363
0.5090E-02	2.996	0.9798	0.6913	1.402
0.5418E-02	3.046	0.9760	0.6973	1.419
0.5916E-02	3.188	0.9766	0.7100	1.458
0.6353E-02	3.395	0.9742	0.7308	1.519
0.6899E-02	3.519	0.9706	0.7423	1.554
0.7468E-02	3.723	0.9722	0.7587	1.607
0.7882E-02	3.872	0.9670	0.7717	1.650
0.8319E-02	3.940	0.9719	0.7743	1.660
0.8959E-02	4.124	0.9686	0.7882	1.706
0.9528E-02	4.326	0.9584	0.8060	1.766
0.1002E-01	4.547	0.9443	0.8228	1.832
0.1096E-01	4.672	0.8669	0.8530	1.952
0.1173E-01	4.611	0.7649	0.8817	2.073
0.1228E-01	4.363	0.6748	0.9007	2.158
0.1288E-01	4.124	0.5843	0.9204	2.257
0.1353E-01	4.013	0.5181	0.9428	2.377

0.1423E-01	3.966	0.4803	0.9555	2.455
0.1488E-01	3.960	0.4519	0.9681	2.540
0.1585E-01	4.028	0.4312	0.9802	2.625
0.1663E-01	4.085	0.4296	0.9843	2.646
0.1735E-01	4.153	0.4266	0.9889	2.682
0.1813E-01	4.223	0.4238	0.9935	2.717
0.1902E-01	4.278	0.4236	0.9956	2.731
0.1983E-01	4.400	0.4236	1.001	2.774
0.2093E-01	4.464	0.4236	1.003	2.795
0.2193E-01	4.466	0.4236	1.002	2.795
0.2281E-01	4.510	0.4236	1.003	2.809
0.2393E-01	4.525	0.4236	1.004	2.816
0.2538E-01	4.562	0.4236	1.005	2.830
0.2685E-01	4.571	0.4236	1.004	2.830
0.2804E-01	4.582	0.4236	1.006	2.837
0.2964E-01	4.567	0.4236	1.005	2.830
0.3139E-01	4.582	0.4236	1.005	2.837
0.3317E-01	4.582	0.4236	1.005	2.837

MEAN PROFILE TABULATION
SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL

X		= 0.3810E-01
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6884E+06
Stagnation Temperature	pitot	= 274.3
M ref		= 2.850
U ref	pitot	= 584.3
P wall		= 0.6085E+05
TAU wall	preston	= 172.9

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.5667E-03	1.852	1.006	0.5270	0.9756
0.1050E-02	2.002	0.9972	0.5575	1.051
0.1581E-02	2.089	0.9886	0.5749	1.094
0.2095E-02	2.168	0.9793	0.5900	1.129
0.2672E-02	2.240	0.9751	0.6022	1.161
0.3233E-02	2.360	0.9690	0.6211	1.211
0.3843E-02	2.516	0.9692	0.6418	1.264
0.4435E-02	2.572	0.9637	0.6488	1.285
0.4950E-02	2.764	0.9627	0.6724	1.349
0.5682E-02	2.925	0.9592	0.6913	1.402
0.6284E-02	3.024	0.9572	0.7011	1.430
0.6876E-02	3.195	0.9550	0.7186	1.483
0.7554E-02	3.428	0.9564	0.7381	1.543
0.8179E-02	3.548	0.9555	0.7499	1.579
0.8872E-02	3.796	0.9538	0.7695	1.643
0.9474E-02	3.982	0.9545	0.7825	1.689
0.1009E-01	4.174	0.9556	0.7963	1.735
0.1072E-01	4.358	0.9568	0.8076	1.775
0.1141E-01	4.544	0.9543	0.8192	1.818
0.1218E-01	4.846	0.9529	0.8364	1.889
0.1273E-01	5.011	0.9560	0.8461	1.924
0.1343E-01	5.206	0.9459	0.8576	1.974
0.1410E-01	5.377	0.9500	0.8645	2.002
0.1468E-01	5.607	0.9479	0.8757	2.051
0.1537E-01	5.719	0.9404	0.8826	2.087
0.1587E-01	5.919	0.9296	0.8928	2.136
0.1648E-01	5.936	0.8957	0.9038	2.186
0.1696E-01	6.035	0.8316	0.9251	2.292
0.1743E-01	5.852	0.7608	0.9383	2.370
0.1805E-01	5.428	0.6488	0.9574	2.476
0.1851E-01	4.991	0.5687	0.9679	2.540
0.1905E-01	4.373	0.5258	0.9537	2.469
0.1959E-01	4.128	0.4828	0.9591	2.505
0.2013E-01	4.084	0.4517	0.9684	2.575
0.2077E-01	4.066	0.4261	0.9794	2.653
0.2133E-01	4.069	0.4036	0.9928	2.731
0.2217E-01	4.043	0.3932	0.9950	2.759
0.2289E-01	4.067	0.3866	0.9999	2.795
0.2387E-01	4.079	0.3815	1.004	2.816
0.2474E-01	4.085	0.3788	1.004	2.830

0.2560E-01	4.089	0.3786	1.005	2.830
0.2672E-01	4.071	0.3785	1.004	2.823
0.2822E-01	4.069	0.3785	1.003	2.823

MEAN PROFILE TABULATION
SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL

X = 0.7620E-01
Z = -.1270E-01
Stagnation Pressure pitot = 0.6890E+06
Stagnation Temperature pitot = 269.9
M ref = 2.850
U ref pitot = 579.6
P wall = 0.6280E+05
TAU wall preston = 234.6

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.5888E-03	2.293	1.033	0.5895	1.133
0.1231E-02	2.494	1.018	0.6218	1.214
0.1835E-02	2.540	1.002	0.6327	1.242
0.2418E-02	2.639	0.9966	0.6464	1.278
0.3020E-02	2.691	0.9874	0.6553	1.303
0.3752E-02	2.876	0.9784	0.6783	1.366
0.4366E-02	2.873	0.9763	0.6791	1.370
0.4999E-02	3.070	0.9705	0.7006	1.434
0.5789E-02	3.194	0.9681	0.7134	1.469
0.6284E-02	3.261	0.9653	0.7197	1.490
0.6876E-02	3.432	0.9646	0.7342	1.536
0.7430E-02	3.548	0.9645	0.7443	1.568
0.7965E-02	3.731	0.9627	0.7603	1.618
0.8567E-02	3.841	0.9606	0.7686	1.646
0.9152E-02	4.100	0.9602	0.7873	1.710
0.9931E-02	4.221	0.9625	0.7948	1.738
0.1061E-01	4.503	0.9634	0.8136	1.804
0.1127E-01	4.769	0.9611	0.8286	1.860
0.1200E-01	5.033	0.9641	0.8446	1.917
0.1255E-01	4.982	0.9659	0.8403	1.903
0.1320E-01	5.395	0.9675	0.8603	1.988
0.1387E-01	5.529	0.9686	0.8671	2.016
0.1459E-01	5.616	0.9701	0.8705	2.030
0.1522E-01	5.904	0.9740	0.8818	2.080
0.1586E-01	6.104	0.9768	0.8891	2.115
0.1658E-01	6.185	0.9766	0.8906	2.129
0.1730E-01	6.231	0.9771	0.8918	2.136
0.1805E-01	6.369	0.9797	0.8966	2.165
0.1876E-01	6.392	0.9812	0.8951	2.165
0.1943E-01	6.435	0.9776	0.8989	2.179
0.1983E-01	6.416	0.9773	0.8970	2.172
0.2076E-01	6.497	0.9804	0.8995	2.186
0.2149E-01	6.473	0.9821	0.8967	2.179
0.2228E-01	6.510	0.9791	0.8993	2.186
0.2298E-01	6.497	0.9770	0.8981	2.186
0.2375E-01	6.522	0.9789	0.9001	2.193
0.2456E-01	6.498	0.9778	0.8988	2.186
0.2527E-01	6.535	0.9762	0.9007	2.193
0.2576E-01	6.535	0.9753	0.9023	2.200
0.2664E-01	6.535	0.9747	0.9016	2.200
0.2733E-01	6.510	0.9650	0.9033	2.207
0.2804E-01	6.503	0.9358	0.9093	2.243
0.2873E-01	6.328	0.8623	0.9233	2.306
0.2931E-01	5.419	0.7433	0.9196	2.299
0.3007E-01	4.113	0.5612	0.9210	2.306
0.3091E-01	4.080	0.4255	0.9824	2.660
0.3203E-01	4.064	0.3838	1.001	2.802
0.3368E-01	4.054	0.3722	1.006	2.844
0.3703E-01	4.037	0.3667	1.007	2.859

MEAN PROFILE TABULATION
SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL

X = 0.1397
Z = -.1270E-01
Stagnation Pressure pitot = 0.6860E+06
Stagnation Temperature pitot = 273.6
M ref = 2.850
U ref pitot = 583.5
P wall = 0.5889E+05
TAU wall preston = 282.5

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.4999E-03	2.656	1.070	0.6215	1.225
0.9545E-03	2.926	1.055	0.6552	1.317
0.1548E-02	3.060	1.051	0.6713	1.359
0.2141E-02	3.167	1.046	0.6853	1.395
0.2695E-02	3.279	1.040	0.6975	1.430
0.3653E-02	3.524	1.040	0.7184	1.494
0.4384E-02	3.537	1.037	0.7199	1.497
0.5235E-02	3.734	1.031	0.7371	1.554
0.6027E-02	3.671	1.024	0.7333	1.543
0.6650E-02	3.851	1.022	0.7480	1.589
0.7607E-02	4.043	1.019	0.7626	1.639
0.8331E-02	4.130	1.016	0.7697	1.664
0.9289E-02	4.288	1.014	0.7818	1.703
0.1015E-01	4.459	1.012	0.7921	1.742
0.1114E-01	4.702	1.012	0.8082	1.797
0.1223E-01	5.076	1.012	0.8284	1.874
0.1334E-01	5.242	1.013	0.8378	1.910
0.1443E-01	5.644	1.017	0.8543	1.981
0.1543E-01	5.880	1.020	0.8639	2.023
0.1654E-01	6.147	1.021	0.8749	2.073
0.1772E-01	6.441	1.021	0.8869	2.129
0.1888E-01	6.646	1.022	0.8946	2.165
0.2007E-01	6.736	1.024	0.8949	2.172
0.2115E-01	6.843	1.026	0.8991	2.193
0.2225E-01	6.845	1.027	0.8972	2.193
0.2334E-01	6.847	1.028	0.8986	2.193
0.2443E-01	6.889	1.029	0.8971	2.193
0.2543E-01	6.845	1.030	0.8937	2.186
0.2642E-01	6.889	1.031	0.8964	2.193
0.2741E-01	6.876	1.033	0.8935	2.186
0.2863E-01	6.848	1.035	0.8928	2.179
0.2967E-01	6.901	1.037	0.8938	2.186
0.3038E-01	6.833	1.037	0.8931	2.179
0.3145E-01	6.874	1.038	0.8940	2.186
0.3216E-01	6.908	1.040	0.8940	2.186
0.3305E-01	6.889	1.040	0.8939	2.186
0.3393E-01	6.913	1.038	0.8944	2.193
0.3480E-01	6.862	1.037	0.8915	2.179
0.3589E-01	6.882	1.037	0.8930	2.186
0.3680E-01	6.903	1.035	0.8944	2.193
0.3759E-01	6.826	1.033	0.8915	2.179
0.3828E-01	6.882	1.032	0.8944	2.193
0.3937E-01	6.847	1.031	0.8930	2.186
0.4034E-01	6.847	1.029	0.8930	2.186
0.4125E-01	6.843	1.027	0.8944	2.193
0.4211E-01	6.803	1.031	0.8915	2.179
0.4305E-01	6.816	1.032	0.8915	2.179
0.4399E-01	6.789	1.027	0.8915	2.179
0.4496E-01	6.847	1.025	0.8944	2.193
0.4590E-01	6.826	1.029	0.8930	2.186
0.4689E-01	6.826	1.032	0.8915	2.179
0.4798E-01	6.836	1.031	0.8930	2.186
0.4905E-01	6.860	0.9689	0.9088	2.264
0.5001E-01	6.789	0.8711	0.9317	2.384
0.5077E-01	4.564	0.7066	0.8855	2.151
0.5113E-01	4.327	0.6287	0.9017	2.228
0.5207E-01	4.349	0.4673	0.9713	2.618
0.5286E-01	4.335	0.4292	0.9884	2.731
0.5431E-01	4.334	0.4097	0.9984	2.802

MEAN PROFILE TABULATION ALPHA = 20 DEG
SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL

X = -.3810E-01

Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6851E+06
Stagnation Temperature	pitot	= 247.8
M ref		= 2.790
U ref	pitot	= 550.8
P wall		= 0.2181E+05
TAU wall	preston	= 141.7

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.4674E-03	2.726	1.087	0.6360	1.235
0.4897E-03	2.867	1.085	0.6525	1.278
0.5786E-03	3.040	1.082	0.6724	1.331
0.7567E-03	3.155	1.080	0.6841	1.363
0.8903E-03	3.291	1.081	0.6973	1.398
0.1069E-02	3.395	1.081	0.7076	1.427
0.1291E-02	3.594	1.080	0.7247	1.476
0.1514E-02	3.771	1.077	0.7401	1.522
0.1803E-02	3.914	1.081	0.7503	1.554
0.2092E-02	4.106	1.076	0.7657	1.604
0.2382E-02	4.233	1.075	0.7742	1.632
0.2583E-02	4.334	1.075	0.7804	1.653
0.3005E-02	4.527	1.075	0.7926	1.696
0.3607E-02	4.686	1.077	0.8017	1.727
0.4117E-02	4.920	1.077	0.8154	1.775
0.4785E-02	5.135	1.072	0.8289	1.825
0.5364E-02	5.328	1.075	0.8377	1.860
0.6033E-02	5.589	1.073	0.8516	1.917
0.6568E-02	5.759	1.074	0.8584	1.945
0.7214E-02	5.924	1.071	0.8669	1.981
0.7882E-02	6.176	1.064	0.8785	2.030
0.8392E-02	6.387	1.066	0.8866	2.066
0.9017E-02	6.580	1.069	0.8944	2.101
0.9528E-02	6.726	1.075	0.8973	2.115
0.1020E-01	6.951	1.076	0.9048	2.151
0.1089E-01	7.162	1.075	0.9135	2.193
0.1153E-01	7.368	1.071	0.9206	2.228
0.1231E-01	7.666	1.071	0.9304	2.278
0.1287E-01	7.808	1.071	0.9345	2.299
0.1354E-01	8.047	1.067	0.9426	2.342
0.1427E-01	8.326	1.068	0.9505	2.384
0.1487E-01	8.478	1.065	0.9555	2.412
0.1554E-01	8.657	1.067	0.9591	2.434
0.1612E-01	8.964	1.071	0.9664	2.476
0.1688E-01	9.046	1.065	0.9698	2.497
0.1741E-01	9.276	1.065	0.9746	2.526
0.1814E-01	9.395	1.065	0.9780	2.547
0.1866E-01	9.748	1.064	0.9860	2.597
0.1939E-01	10.02	1.066	0.9912	2.632
0.1990E-01	10.14	1.069	0.9931	2.646
0.2053E-01	10.27	1.069	0.9948	2.660
0.2119E-01	10.40	1.066	0.9974	2.682
0.2171E-01	10.58	1.067	1.001	2.710
0.2244E-01	10.72	1.067	1.002	2.724
0.2302E-01	10.83	1.069	1.003	2.738
0.2373E-01	10.90	1.071	1.004	2.745
0.2440E-01	11.05	1.073	1.007	2.766
0.2494E-01	11.04	1.075	1.005	2.759
0.2570E-01	11.10	1.076	1.006	2.766
0.2637E-01	11.14	1.074	1.006	2.774
0.2703E-01	11.15	1.071	1.007	2.781
0.2779E-01	11.10	1.071	1.005	2.774
0.2868E-01	11.18	1.067	1.007	2.788
0.2969E-01	11.21	1.065	1.008	2.795

MEAN PROFILE TABULATION ALPHA = 20 DEG

SURVEY IS 5.5 DEGREES OFF VERTICAL

X		= -.1111E-01
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6867E+06
Stagnation Temperature	pitot	= 246.5
M ref		= 2.790
U ref	pitot	= 549.3
P wall		= 0.4109E+05
TAU wall	preston	= 19.73

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.5786E-03	1.106	1.055	0.1523	0.2612
0.8458E-03	1.148	1.052	0.2061	0.3560
0.1269E-02	1.229	1.048	0.2758	0.4819
0.1536E-02	1.320	1.045	0.3322	0.5869
0.1959E-02	1.479	1.041	0.4045	0.7275
0.2204E-02	1.673	1.037	0.4675	0.8564
0.2337E-02	1.781	1.036	0.4949	0.9150
0.2604E-02	1.905	1.035	0.5224	0.9756
0.2761E-02	2.059	1.033	0.5525	1.044
0.3071E-02	2.168	1.026	0.5719	1.090
0.3294E-02	2.237	1.020	0.5849	1.122
0.3541E-02	2.443	1.013	0.6165	1.200
0.4051E-02	2.721	1.002	0.6547	1.299
0.4407E-02	2.838	0.9899	0.6717	1.345
0.4785E-02	3.001	0.9782	0.6933	1.405
0.5009E-02	3.071	0.9712	0.7031	1.434
0.5387E-02	3.181	0.9587	0.7175	1.476
0.5743E-02	3.261	0.9437	0.7291	1.512
0.6010E-02	3.405	0.9311	0.7461	1.565
0.6279E-02	3.487	0.9254	0.7537	1.589
0.6568E-02	3.514	0.9192	0.7580	1.604
0.6947E-02	3.607	0.9063	0.7700	1.643
0.7236E-02	3.643	0.8949	0.7764	1.664
0.7569E-02	3.748	0.8789	0.7900	1.710
0.7971E-02	3.782	0.8532	0.8008	1.749
0.8280E-02	3.775	0.8236	0.8100	1.782
0.8682E-02	3.811	0.7977	0.8212	1.825
0.8948E-02	3.860	0.7763	0.8324	1.867
0.9307E-02	3.896	0.7511	0.8433	1.910
0.9751E-02	3.904	0.7216	0.8539	1.952
0.1022E-01	3.913	0.6918	0.8658	2.002
0.1055E-01	3.960	0.6788	0.8738	2.037
0.1098E-01	4.042	0.6626	0.8847	2.087
0.1149E-01	4.062	0.6488	0.8905	2.115
0.1189E-01	4.098	0.6396	0.8965	2.143
0.1216E-01	4.154	0.6358	0.9011	2.165
0.1267E-01	4.227	0.6288	0.9086	2.200
0.1305E-01	4.332	0.6248	0.9160	2.235
0.1334E-01	4.342	0.6233	0.9174	2.243
0.1389E-01	4.405	0.6175	0.9231	2.271
0.1420E-01	4.478	0.6142	0.9288	2.299
0.1458E-01	4.505	0.6118	0.9315	2.313
0.1489E-01	4.673	0.6101	0.9407	2.363
0.1534E-01	4.687	0.6082	0.9415	2.370
0.1576E-01	4.782	0.6067	0.9463	2.398
0.1630E-01	4.821	0.6051	0.9483	2.412
0.1665E-01	4.953	0.6044	0.9547	2.448
0.1685E-01	5.050	0.6041	0.9596	2.476
0.1741E-01	5.055	0.6035	0.9596	2.476
0.1772E-01	5.191	0.6032	0.9657	2.512
0.1819E-01	5.138	0.6028	0.9633	2.497
0.1881E-01	5.301	0.6026	0.9705	2.540
0.1912E-01	5.369	0.6026	0.9740	2.561
0.1970E-01	5.478	0.6026	0.9783	2.589
0.1986E-01	5.515	0.6026	0.9792	2.597
0.2030E-01	5.476	0.6026	0.9765	2.582
0.2088E-01	5.580	0.6026	0.9805	2.611
0.2135E-01	5.729	0.6026	0.9857	2.646
0.2182E-01	5.780	0.6026	0.9876	2.660
0.2209E-01	5.834	0.6026	0.9896	2.674
0.2262E-01	5.860	0.6026	0.9903	2.682
0.2311E-01	5.817	0.6026	0.9877	2.667
0.2342E-01	5.960	0.6025	0.9927	2.703
0.2409E-01	5.960	0.6023	0.9924	2.703
0.2462E-01	6.016	0.6021	0.9947	2.717
0.2513E-01	6.038	0.6022	0.9959	2.724

0.2565E-01	6.053	0.6023	0.9956	2.724
0.2621E-01	6.104	0.6024	0.9969	2.738
0.2662E-01	6.109	0.6025	0.9964	2.738
0.2690E-01	6.116	0.6026	0.9961	2.738
0.2733E-01	6.162	0.6028	0.9983	2.752
0.2781E-01	6.126	0.6030	0.9974	2.745
0.2799E-01	6.155	0.6031	0.9985	2.752
0.2797E-01	6.155	0.6031	0.9985	2.752
0.2855E-01	6.162	0.6034	0.9984	2.752
0.2906E-01	6.172	0.6036	0.9977	2.752
0.2936E-01	6.177	0.6039	0.9973	2.752
0.2962E-01	6.189	0.6041	0.9969	2.752
0.3010E-01	6.194	0.6045	0.9966	2.752
0.3068E-01	6.206	0.6050	0.9977	2.759

MEAN PROFILE TABULATION ALPHA = 20 DEG
SURVEY IS 5.5 DEGREES OFF VERTICAL

X		= 0.0000E+00
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6957E+06
Stagnation Temperature	pitot	= 254.4
M ref		= 2.790
U ref	pitot	= 558.1
P wall		= 0.4615E+05
TAU wall	preston	= 13.47

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.1579E-02	1.006	0.9884	0.9354E-01	0.1594
0.1824E-02	1.033	0.9864	0.1509	0.2583
0.2068E-02	1.048	0.9925	0.1632	0.2798
0.2380E-02	1.076	0.9938	0.1966	0.3384
0.2558E-02	1.115	0.9935	0.2367	0.4097
0.2913E-02	1.165	0.9896	0.2806	0.4893
0.3269E-02	1.215	0.9927	0.3101	0.5439
0.3492E-02	1.296	0.9906	0.3566	0.6318
0.3848E-02	1.400	0.9851	0.4055	0.7275
0.4158E-02	1.501	0.9839	0.4423	0.8018
0.4493E-02	1.648	0.9868	0.4835	0.8877
0.4691E-02	1.770	0.9888	0.5133	0.9521
0.4938E-02	1.869	0.9874	0.5340	0.9980
0.5116E-02	1.993	0.9861	0.5590	1.055
0.5405E-02	2.101	0.9845	0.5785	1.101
0.5649E-02	2.173	0.9842	0.5901	1.129
0.5850E-02	2.306	0.9839	0.6102	1.179
0.6027E-02	2.388	0.9837	0.6214	1.207
0.6294E-02	2.472	0.9837	0.6322	1.235
0.6604E-02	2.687	0.9837	0.6592	1.306
0.6916E-02	2.758	0.9837	0.6670	1.327
0.7160E-02	2.860	0.9837	0.6787	1.359
0.7450E-02	2.927	0.9818	0.6863	1.381
0.7717E-02	3.086	0.9796	0.7039	1.430
0.7940E-02	3.144	0.9773	0.7100	1.448
0.8250E-02	3.294	0.9739	0.7246	1.490
0.8539E-02	3.317	0.9698	0.7282	1.501
0.8829E-02	3.430	0.9657	0.7400	1.536
0.9208E-02	3.556	0.9603	0.7526	1.575
0.9586E-02	3.703	0.9548	0.7657	1.618
0.9741E-02	3.779	0.9525	0.7720	1.639
0.1007E-01	3.935	0.9487	0.7843	1.681
0.1039E-01	3.957	0.9452	0.7870	1.692
0.1074E-01	3.983	0.9412	0.7896	1.703
0.1101E-01	4.217	0.9372	0.8067	1.763
0.1128E-01	4.236	0.9330	0.8080	1.768
0.1165E-01	4.377	0.9276	0.8196	1.811
0.1194E-01	4.438	0.9233	0.8252	1.832
0.1205E-01	4.446	0.9218	0.8252	1.832
0.1232E-01	4.546	0.9183	0.8326	1.860
0.1261E-01	4.596	0.9147	0.8362	1.874
0.1294E-01	4.583	0.9094	0.8379	1.881
0.1328E-01	4.652	0.9036	0.8432	1.903
0.1379E-01	4.652	0.8833	0.8483	1.924

0.1417E-01	4.583	0.8660	0.8499	1.931
0.1448E-01	4.568	0.8513	0.8533	1.945
0.1483E-01	4.535	0.8289	0.8584	1.966
0.1535E-01	4.531	0.7764	0.8752	2.037
0.1579E-01	4.457	0.7217	0.8895	2.101
0.1617E-01	4.459	0.6698	0.9093	2.193
0.1663E-01	4.496	0.6264	0.9264	2.278
0.1699E-01	4.483	0.5984	0.9372	2.335
0.1746E-01	4.529	0.5628	0.9540	2.427
0.1786E-01	4.563	0.5382	0.9651	2.490
0.1830E-01	4.622	0.5150	0.9779	2.568

MEAN PROFILE TABULATION ALPHA = 20 DEG
SURVEY IS 5.5 DEGREES OFF VERTICAL

X		= 0.3969E-02
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6902E+06
Stagnation Temperature	pitot	= 256.4
M ref		= 2.790
U ref	pitot	= 560.3
P wall		= 0.5073E+05
TAU wall	preston	= 11.24

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.1624E-02	1.006	0.9473	0.1715	0.2935
0.2046E-02	1.051	0.9571	0.2136	0.3677
0.2581E-02	1.134	0.9648	0.2796	0.4868
0.3114E-02	1.247	0.9602	0.3518	0.6221
0.3713E-02	1.385	0.9536	0.4179	0.7510
0.4204E-02	1.498	0.9586	0.4544	0.8252
0.4493E-02	1.619	0.9557	0.4905	0.9014
0.4803E-02	1.782	0.9536	0.5309	0.9902
0.5070E-02	1.881	0.9517	0.5514	1.037
0.5316E-02	2.024	0.9503	0.5770	1.097
0.5603E-02	2.137	0.9494	0.5959	1.143
0.6050E-02	2.273	0.9450	0.6188	1.200
0.6406E-02	2.431	0.9455	0.6397	1.253
0.6716E-02	2.594	0.9442	0.6612	1.310
0.7071E-02	2.691	0.9421	0.6743	1.345
0.7384E-02	2.803	0.9380	0.6883	1.384
0.7894E-02	2.874	0.9312	0.6969	1.409
0.8273E-02	3.126	0.9255	0.7249	1.490
0.8608E-02	3.215	0.9191	0.7353	1.522
0.9030E-02	3.320	0.9121	0.7467	1.558
0.9520E-02	3.416	0.9041	0.7577	1.593
0.9964E-02	3.578	0.8962	0.7740	1.646
0.1050E-01	3.735	0.8856	0.7894	1.699
0.1085E-01	3.804	0.8799	0.7964	1.724
0.1132E-01	3.948	0.8749	0.8082	1.766
0.1174E-01	4.256	0.8700	0.8297	1.846
0.1228E-01	4.264	0.8620	0.8330	1.860
0.1288E-01	4.457	0.8505	0.8473	1.917
0.1326E-01	4.479	0.8432	0.8529	1.938
0.1366E-01	4.524	0.8364	0.8567	1.952
0.1406E-01	4.498	0.8250	0.8604	1.966
0.1443E-01	4.502	0.8166	0.8623	1.974
0.1472E-01	4.457	0.8079	0.8621	1.974
0.1503E-01	4.418	0.7935	0.8653	1.988
0.1535E-01	4.354	0.7764	0.8667	1.995
0.1572E-01	4.331	0.7459	0.8749	2.030
0.1619E-01	4.256	0.6952	0.8891	2.094
0.1661E-01	4.264	0.6470	0.9070	2.179
0.1706E-01	4.256	0.6071	0.9210	2.250
0.1744E-01	4.274	0.5734	0.9358	2.328
0.1790E-01	4.274	0.5425	0.9488	2.398
0.1839E-01	4.331	0.5162	0.9624	2.476
0.1895E-01	4.376	0.4755	0.9834	2.604
0.1939E-01	4.410	0.4589	0.9918	2.660
0.1999E-01	4.524	0.4452	1.003	2.745
0.2044E-01	4.526	0.4370	1.007	2.774

MEAN PROFILE TABULATION ALPHA = 20 DEG
SURVEY IS 5.5 DEGREES OFF VERTICAL

X			= 0.1270E-01
Z			= -.1270E-01
Stagnation Pressure	pitot		= 0.6936E+06
Stagnation Temperature	pitot		= 247.7
M ref			= 2.790
U ref	pitot		= 550.7
P wall			= 0.5830E+05
TAU wall	preston		= 45.80

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.1333E-02	1.210	0.9780	0.3198	0.5596
0.1421E-02	1.232	0.9752	0.3354	0.5889
0.1555E-02	1.249	0.9664	0.3498	0.6162
0.1644E-02	1.260	0.9672	0.3549	0.6260
0.1733E-02	1.267	0.9671	0.3589	0.6338
0.1799E-02	1.288	0.9643	0.3711	0.6572
0.1932E-02	1.297	0.9615	0.3770	0.6689
0.2021E-02	1.317	0.9595	0.3870	0.6885
0.2132E-02	1.331	0.9573	0.3939	0.7021
0.2221E-02	1.342	0.9557	0.3998	0.7139
0.2354E-02	1.331	0.9537	0.3957	0.7061
0.2443E-02	1.366	0.9524	0.4115	0.7373
0.2576E-02	1.390	0.9507	0.4212	0.7568
0.2664E-02	1.434	0.9497	0.4375	0.7900
0.2842E-02	1.454	0.9476	0.4450	0.8057
0.2977E-02	1.466	0.9455	0.4506	0.8174
0.3132E-02	1.520	0.9430	0.4684	0.8545
0.3287E-02	1.559	0.9402	0.4812	0.8818
0.3421E-02	1.559	0.9376	0.4820	0.8838
0.3576E-02	1.590	0.9374	0.4910	0.9033
0.3754E-02	1.584	0.9395	0.4881	0.8975
0.3952E-02	1.653	0.9411	0.5052	0.9346
0.4130E-02	1.719	0.9400	0.5211	0.9697
0.4288E-02	1.798	0.9391	0.5384	1.009
0.4465E-02	1.849	0.9375	0.5492	1.034
0.4663E-02	1.919	0.9354	0.5645	1.069
0.4841E-02	1.988	0.9285	0.5796	1.104
0.5085E-02	2.005	0.9261	0.5826	1.112
0.5243E-02	2.081	0.9329	0.5929	1.136
0.5420E-02	2.154	0.9338	0.6046	1.165
0.5707E-02	2.238	0.9316	0.6189	1.200
0.5931E-02	2.293	0.9308	0.6259	1.218
0.6129E-02	2.374	0.9301	0.6381	1.250
0.6353E-02	2.439	0.9279	0.6474	1.274
0.6619E-02	2.532	0.9250	0.6591	1.306
0.6886E-02	2.614	0.9272	0.6680	1.331
0.7196E-02	2.741	0.9262	0.6831	1.373
0.7485E-02	2.804	0.9239	0.6904	1.395
0.7795E-02	2.957	0.9226	0.7075	1.444
0.8019E-02	3.081	0.9221	0.7194	1.480
0.8374E-02	3.194	0.9204	0.7309	1.515
0.8641E-02	3.250	0.9200	0.7364	1.533
0.8928E-02	3.328	0.9170	0.7444	1.558
0.9373E-02	3.521	0.9100	0.7622	1.614
0.9596E-02	3.552	0.9070	0.7665	1.628
0.9860E-02	3.738	0.9060	0.7815	1.678
0.1022E-01	3.724	0.9037	0.7803	1.674
0.1057E-01	3.928	0.9000	0.7968	1.731
0.1090E-01	4.015	0.8950	0.8048	1.759
0.1131E-01	4.137	0.8901	0.8150	1.797
0.1170E-01	4.175	0.8864	0.8188	1.811
0.1208E-01	4.376	0.8816	0.8320	1.860
0.1253E-01	4.506	0.8748	0.8430	1.903
0.1288E-01	4.611	0.8682	0.8501	1.931
0.1333E-01	4.758	0.8580	0.8625	1.981
0.1370E-01	4.930	0.8476	0.8762	2.037
0.1402E-01	5.026	0.8397	0.8829	2.066
0.1453E-01	5.098	0.8237	0.8908	2.101
0.1490E-01	5.194	0.7958	0.9045	2.165
0.1537E-01	5.288	0.7564	0.9217	2.250
0.1579E-01	5.201	0.7142	0.9311	2.299
0.1617E-01	5.192	0.6761	0.9431	2.363
0.1666E-01	5.038	0.6716	0.9372	2.335
0.1710E-01	4.883	0.6221	0.9475	2.391
0.1755E-01	4.628	0.4973	0.9859	2.618
0.1781E-01	4.477	0.4585	0.9963	2.689
0.1799E-01	4.422	0.4321	1.005	2.752

MEAN PROFILE TABULATION
SURVEY NORMAL TO RAMP SURFACE-20 DEG OFF VERTICAL

X			= 0.2540E-01
Z			= -.1270E-01
Stagnation Pressure	pitot		= 0.6865E+06
Stagnation Temperature	pitot		= 259.6
M ref			= 2.790
U ref	pitot		= 563.7
P wall			= 0.6597E+05
TAU wall	preston		= 98.22

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.4869E-03	1.338	1.032	0.3534	0.6201
0.6861E-03	1.338	1.023	0.3584	0.6299
0.9294E-03	1.348	1.012	0.3704	0.6533
0.1062E-02	1.390	1.007	0.3915	0.6943
0.1173E-02	1.396	1.002	0.3973	0.7061
0.1394E-02	1.419	0.9963	0.4092	0.7295
0.1681E-02	1.425	0.9927	0.4130	0.7373
0.1969E-02	1.454	0.9863	0.4275	0.7666
0.2190E-02	1.459	0.9796	0.4321	0.7764
0.2478E-02	1.508	0.9754	0.4500	0.8135
0.2654E-02	1.537	0.9743	0.4603	0.8350
0.2898E-02	1.570	0.9662	0.4732	0.8623
0.3076E-02	1.573	0.9630	0.4758	0.8682
0.3297E-02	1.587	0.9594	0.4810	0.8799
0.3495E-02	1.620	0.9580	0.4899	0.8994
0.3673E-02	1.648	0.9567	0.4979	0.9170
0.3894E-02	1.733	0.9515	0.5200	0.9658
0.4049E-02	1.728	0.9464	0.5216	0.9697
0.4224E-02	1.745	0.9433	0.5254	0.9785
0.4425E-02	1.761	0.9451	0.5287	0.9863
0.4623E-02	1.899	0.9453	0.5573	1.051
0.4735E-02	1.907	0.9439	0.5588	1.055
0.4999E-02	1.922	0.9405	0.5633	1.065
0.5154E-02	1.998	0.9412	0.5769	1.097
0.5309E-02	2.078	0.9419	0.5901	1.129
0.5552E-02	2.103	0.9416	0.5926	1.136
0.5751E-02	2.098	0.9404	0.5923	1.136
0.5951E-02	2.219	0.9392	0.6123	1.186
0.6060E-02	2.322	0.9380	0.6279	1.225
0.6261E-02	2.362	0.9357	0.6335	1.239
0.6436E-02	2.388	0.9338	0.6377	1.250
0.6703E-02	2.483	0.9350	0.6501	1.281
0.6901E-02	2.583	0.9360	0.6620	1.313
0.7122E-02	2.671	0.9366	0.6722	1.342
0.7343E-02	2.723	0.9347	0.6785	1.359
0.7498E-02	2.829	0.9334	0.6911	1.395
0.7765E-02	2.845	0.9312	0.6934	1.402
0.8009E-02	2.967	0.9292	0.7070	1.441
0.8230E-02	2.997	0.9280	0.7106	1.451
0.8451E-02	3.042	0.9283	0.7141	1.462
0.8715E-02	3.186	0.9286	0.7284	1.504
0.9047E-02	3.380	0.9285	0.7457	1.558
0.9268E-02	3.397	0.9284	0.7478	1.565
0.9512E-02	3.485	0.9282	0.7546	1.586
0.9822E-02	3.644	0.9280	0.7679	1.628
0.9997E-02	3.728	0.9278	0.7754	1.653
0.1031E-01	3.785	0.9257	0.7797	1.667
0.1053E-01	3.861	0.9242	0.7860	1.689
0.1082E-01	3.976	0.9222	0.7952	1.720
0.1102E-01	4.091	0.9209	0.8033	1.749

0.1135E-01	4.231	0.9186	0.8146	1.789
0.1157E-01	4.257	0.9170	0.8166	1.797
0.1192E-01	4.452	0.9144	0.8300	1.846
0.1212E-01	4.533	0.9129	0.8338	1.860
0.1223E-01	4.475	0.9121	0.8319	1.853
0.1252E-01	4.633	0.9095	0.8408	1.889
0.1267E-01	4.667	0.9080	0.8443	1.903
0.1292E-01	4.707	0.9055	0.8458	1.910
0.1325E-01	4.772	0.9006	0.8509	1.931
0.1347E-01	4.981	0.8966	0.8631	1.981
0.1362E-01	4.955	0.8936	0.8630	1.981
0.1385E-01	5.034	0.8878	0.8698	2.009
0.1422E-01	5.107	0.8753	0.8764	2.037
0.1444E-01	5.175	0.8705	0.8813	2.058
0.1467E-01	5.222	0.8666	0.8846	2.073
0.1495E-01	5.259	0.8603	0.8878	2.087
0.1531E-01	5.333	0.8507	0.8958	2.122
0.1555E-01	5.374	0.8436	0.8989	2.136
0.1593E-01	5.360	0.8262	0.9035	2.158
0.1615E-01	5.413	0.8145	0.9094	2.186
0.1641E-01	5.301	0.7989	0.9085	2.186
0.1657E-01	5.287	0.7889	0.9110	2.200
0.1686E-01	5.207	0.7724	0.9115	2.207
0.1694E-01	5.178	0.7679	0.9113	2.207
0.1717E-01	5.066	0.7525	0.9095	2.200
0.1732E-01	4.846	0.7414	0.9019	2.165
0.1754E-01	4.922	0.7248	0.9123	2.214
0.1761E-01	4.764	0.7169	0.9063	2.186
0.1776E-01	4.619	0.6998	0.9047	2.179
0.1796E-01	4.484	0.6771	0.9061	2.186
0.1818E-01	4.395	0.6536	0.9089	2.200
0.1838E-01	4.114	0.6336	0.8995	2.158
0.1856E-01	3.982	0.6153	0.8992	2.158
0.1867E-01	3.890	0.6038	0.8975	2.151
0.1885E-01	3.913	0.5850	0.9062	2.193
0.1907E-01	3.832	0.5631	0.9103	2.214
0.1938E-01	3.709	0.5342	0.9158	2.243
0.1973E-01	3.670	0.4670	0.9443	2.391

MEAN PROFILE TABULATION
SURVEY NORMAL TO RAMP SURFACE-20 DEG OFF VERTICAL

X		= 0.4128E-01
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6943E+06
Stagnation Temperature	pitot	= 260.9
M ref		= 2.790
U ref	pitot	= 565.2
P wall		= 0.7209E+05
TAU wall	preston	= 132.9

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.4427E-03	1.468	1.104	0.3694	0.6514
0.5756E-03	1.495	1.098	0.3827	0.6787
0.7523E-03	1.526	1.091	0.3969	0.7080
0.9736E-03	1.575	1.076	0.4225	0.7588
0.1173E-02	1.565	1.070	0.4214	0.7568
0.1328E-02	1.594	1.066	0.4331	0.7803
0.1504E-02	1.627	1.057	0.4475	0.8096
0.1726E-02	1.648	1.055	0.4551	0.8252
0.1881E-02	1.663	1.051	0.4608	0.8369
0.2146E-02	1.670	1.044	0.4664	0.8486
0.2434E-02	1.687	1.036	0.4735	0.8643
0.2766E-02	1.708	1.022	0.4851	0.8896
0.3162E-02	1.766	1.018	0.5000	0.9229
0.3317E-02	1.792	1.014	0.5079	0.9404
0.3607E-02	1.834	1.009	0.5183	0.9639
0.3894E-02	1.844	1.002	0.5235	0.9756
0.4336E-02	1.935	0.9975	0.5429	1.019
0.4580E-02	1.988	0.9929	0.5552	1.048
0.4910E-02	1.984	0.9877	0.5565	1.051
0.5309E-02	2.073	0.9834	0.5728	1.090

0.5596E-02	2.188	0.9806	0.5918	1.136
0.5839E-02	2.200	0.9783	0.5945	1.143
0.6106E-02	2.247	0.9759	0.6029	1.165
0.6482E-02	2.303	0.9730	0.6111	1.186
0.6746E-02	2.376	0.9714	0.6223	1.214
0.7033E-02	2.475	0.9682	0.6361	1.250
0.7366E-02	2.632	0.9640	0.6576	1.306
0.7521E-02	2.705	0.9635	0.6654	1.327
0.7742E-02	2.798	0.9628	0.6770	1.359
0.8029E-02	2.765	0.9613	0.6730	1.349
0.8230E-02	2.909	0.9594	0.6896	1.395
0.8471E-02	3.002	0.9574	0.6995	1.423
0.8781E-02	3.019	0.9564	0.7018	1.430
0.9114E-02	3.150	0.9556	0.7151	1.469
0.9423E-02	3.214	0.9558	0.7209	1.487
0.9733E-02	3.325	0.9541	0.7314	1.519
0.1011E-01	3.544	0.9519	0.7507	1.579
0.1018E-01	3.596	0.9518	0.7551	1.593
0.1031E-01	3.740	0.9517	0.7672	1.632
0.1071E-01	3.783	0.9515	0.7702	1.643
0.1097E-01	3.868	0.9515	0.7765	1.664
0.1113E-01	3.988	0.9515	0.7849	1.692
0.1137E-01	3.876	0.9515	0.7764	1.664
0.1172E-01	4.245	0.9515	0.8023	1.752
0.1201E-01	4.191	0.9497	0.7994	1.742
0.1221E-01	4.381	0.9483	0.8129	1.789
0.1250E-01	4.540	0.9483	0.8226	1.825
0.1283E-01	4.545	0.9491	0.8227	1.825
0.1298E-01	4.674	0.9493	0.8303	1.853
0.1321E-01	4.748	0.9493	0.8359	1.874
0.1338E-01	4.801	0.9493	0.8378	1.881
0.1367E-01	4.927	0.9488	0.8451	1.910
0.1385E-01	4.976	0.9483	0.8487	1.924
0.1407E-01	4.905	0.9477	0.8451	1.910
0.1433E-01	4.994	0.9464	0.8505	1.931
0.1467E-01	5.177	0.9442	0.8591	1.966
0.1500E-01	5.201	0.9416	0.8605	1.974
0.1526E-01	5.391	0.9401	0.8706	2.016
0.1557E-01	5.417	0.9385	0.8720	2.023
0.1586E-01	5.552	0.9368	0.8801	2.058
0.1615E-01	5.653	0.9347	0.8844	2.080
0.1650E-01	5.678	0.9315	0.8854	2.087
0.1668E-01	5.635	0.9297	0.8834	2.080
0.1703E-01	5.724	0.9254	0.8876	2.101
0.1741E-01	5.682	0.9198	0.8868	2.101
0.1783E-01	5.728	0.9122	0.8911	2.122
0.1814E-01	5.754	0.9053	0.8938	2.136
0.1871E-01	5.774	0.8898	0.8978	2.158
0.1933E-01	5.731	0.8643	0.9034	2.186
0.1984E-01	5.688	0.8240	0.9135	2.235
0.2013E-01	5.618	0.7808	0.9234	2.285
0.2061E-01	5.499	0.7257	0.9356	2.349
0.2073E-01	5.434	0.7046	0.9395	2.370
0.2090E-01	5.262	0.6756	0.9420	2.384
0.2106E-01	5.181	0.6525	0.9458	2.405
0.2115E-01	5.177	0.6395	0.9508	2.434
0.2123E-01	5.148	0.6280	0.9533	2.448
0.2139E-01	4.825	0.5953	0.9506	2.434
0.2152E-01	4.839	0.5677	0.9616	2.497
0.2168E-01	4.497	0.5334	0.9591	2.483
0.2179E-01	4.373	0.5079	0.9638	2.512
0.2185E-01	4.357	0.4940	0.9697	2.547
0.2212E-01	4.148	0.4488	0.9798	2.611
0.2227E-01	3.847	0.4286	0.9728	2.568
0.2247E-01	3.637	0.3963	0.9773	2.597
0.2278E-01	3.528	0.3391	1.004	2.774

MEAN PROFILE TABULATION
SURVEY NORMAL TO RAMP SURFACE-20 DEG OFF VERTICAL

X		= 0.7620E-01
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6657E+06

Stagnation Temperature pitot = 250.8
M ref = 2.790
U ref pitot = 554.1
P wall = 0.7715E+05
TAU wall preston = 224.3

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.5324E-03	1.576	1.012	0.4533	0.8213
0.5324E-03	1.650	1.012	0.4749	0.8662
0.5989E-03	1.668	1.011	0.4803	0.8779
0.6213E-03	1.712	1.010	0.4913	0.9014
0.7544E-03	1.746	1.008	0.4998	0.9209
0.9096E-03	1.771	1.007	0.5052	0.9346
0.1043E-02	1.781	1.003	0.5088	0.9443
0.1198E-02	1.826	0.9975	0.5203	0.9717
0.1353E-02	1.866	0.9965	0.5286	0.9902
0.1508E-02	1.907	0.9948	0.5387	1.012
0.1708E-02	1.940	0.9912	0.5468	1.030
0.1863E-02	1.961	0.9871	0.5518	1.041
0.2019E-02	1.966	0.9837	0.5551	1.048
0.2240E-02	1.991	0.9823	0.5596	1.058
0.2462E-02	2.010	0.9780	0.5641	1.069
0.2616E-02	2.027	0.9745	0.5686	1.080
0.2751E-02	2.040	0.9711	0.5716	1.087
0.2817E-02	2.045	0.9695	0.5731	1.090
0.3038E-02	2.051	0.9679	0.5746	1.094
0.3282E-02	2.069	0.9667	0.5789	1.104
0.3571E-02	2.089	0.9621	0.5831	1.115
0.3749E-02	2.119	0.9599	0.5888	1.129
0.4059E-02	2.123	0.9563	0.5901	1.133
0.4237E-02	2.163	0.9545	0.5972	1.150
0.4547E-02	2.205	0.9519	0.6042	1.168
0.4790E-02	2.209	0.9505	0.6054	1.172
0.5100E-02	2.259	0.9475	0.6137	1.193
0.5344E-02	2.286	0.9447	0.6177	1.204
0.5568E-02	2.336	0.9424	0.6259	1.225
0.5789E-02	2.336	0.9409	0.6257	1.225
0.6121E-02	2.358	0.9389	0.6296	1.235
0.6299E-02	2.411	0.9375	0.6363	1.253
0.6477E-02	2.451	0.9361	0.6430	1.271
0.6744E-02	2.467	0.9357	0.6442	1.274
0.7031E-02	2.473	0.9331	0.6466	1.281
0.7341E-02	2.591	0.9318	0.6610	1.320
0.7564E-02	2.645	0.9306	0.6674	1.338
0.7739E-02	2.701	0.9294	0.6750	1.359
0.8006E-02	2.767	0.9281	0.6826	1.381
0.8184E-02	2.811	0.9275	0.6876	1.395
0.8296E-02	2.832	0.9272	0.6901	1.402
0.8539E-02	2.835	0.9265	0.6900	1.402
0.8806E-02	2.975	0.9257	0.7060	1.448
0.9050E-02	2.999	0.9250	0.7084	1.455
0.9337E-02	3.051	0.9239	0.7131	1.469
0.9604E-02	3.077	0.9234	0.7166	1.480
0.9936E-02	3.213	0.9252	0.7283	1.515
0.1022E-01	3.278	0.9256	0.7339	1.533
0.1036E-01	3.366	0.9254	0.7419	1.558
0.1054E-01	3.465	0.9252	0.7508	1.586
0.1073E-01	3.492	0.9248	0.7530	1.593
0.1096E-01	3.588	0.9241	0.7606	1.618
0.1111E-01	3.618	0.9236	0.7638	1.628
0.1133E-01	3.671	0.9229	0.7681	1.643
0.1164E-01	3.755	0.9224	0.7746	1.664
0.1191E-01	3.780	0.9231	0.7768	1.671
0.1215E-01	3.883	0.9237	0.7842	1.696
0.1244E-01	3.951	0.9245	0.7884	1.710
0.1273E-01	4.082	0.9253	0.7976	1.742
0.1297E-01	4.180	0.9261	0.8047	1.766
0.1324E-01	4.263	0.9269	0.8091	1.782
0.1351E-01	4.391	0.9283	0.8169	1.811
0.1373E-01	4.437	0.9294	0.8207	1.825
0.1406E-01	4.618	0.9310	0.8302	1.860
0.1428E-01	4.734	0.9317	0.8376	1.889
0.1451E-01	4.774	0.9322	0.8394	1.896
0.1479E-01	4.890	0.9330	0.8466	1.924
0.1504E-01	4.992	0.9336	0.8519	1.945
0.1533E-01	5.098	0.9342	0.8571	1.966
0.1555E-01	5.128	0.9345	0.8570	1.966
0.1573E-01	5.180	0.9348	0.8604	1.981
0.1599E-01	5.191	0.9355	0.8604	1.981
0.1632E-01	5.240	0.9365	0.8637	1.995
0.1661E-01	5.318	0.9373	0.8669	2.009
0.1672E-01	5.382	0.9376	0.8684	2.016
0.1694E-01	5.421	0.9382	0.8714	2.030
0.1725E-01	5.463	0.9390	0.8726	2.037
0.1770E-01	5.571	0.9401	0.8768	2.058
0.1790E-01	5.545	0.9401	0.8749	2.051
0.1828E-01	5.574	0.9401	0.8760	2.058
0.1865E-01	5.614	0.9401	0.8772	2.066
0.1901E-01	5.620	0.9404	0.8768	2.066
0.1945E-01	5.627	0.9408	0.8764	2.066
0.1976E-01	5.634	0.9410	0.8761	2.066
0.2049E-01	5.646	0.9410	0.8756	2.066
0.2122E-01	5.640	0.9417	0.8754	2.066
0.2198E-01	5.599	0.9427	0.8736	2.058
0.2264E-01	5.590	0.9392	0.8734	2.058
0.2349E-01	5.571	0.9375	0.8730	2.058
0.2424E-01	5.545	0.9355	0.8728	2.058
0.2475E-01	5.517	0.9338	0.8714	2.051
0.2515E-01	5.515	0.9326	0.8716	2.051
0.2565E-01	5.515	0.9332	0.8718	2.051
0.2624E-01	5.493	0.9327	0.8720	2.051
0.2685E-01	5.475	0.9312	0.8707	2.044
0.2738E-01	5.478	0.9312	0.8709	2.044
0.2804E-01	5.470	0.9312	0.8711	2.044
0.2850E-01	5.450	0.9310	0.8708	2.044
0.2921E-01	5.426	0.9282	0.8685	2.037
0.3002E-01	5.415	0.9115	0.8728	2.058
0.3071E-01	5.397	0.8293	0.8964	2.165
0.3124E-01	5.259	0.7243	0.9226	2.292
0.3122E-01	5.176	0.7292	0.9170	2.264
0.3145E-01	5.081	0.6745	0.9322	2.342
0.3145E-01	4.962	0.6745	0.9268	2.313
0.3152E-01	4.883	0.6580	0.9282	2.320
0.3160E-01	4.708	0.6392	0.9268	2.313
0.3185E-01	4.508	0.5898	0.9350	2.356
0.3188E-01	4.275	0.5841	0.9255	2.306
0.3203E-01	3.999	0.5558	0.9214	2.285
0.3213E-01	3.794	0.5365	0.9172	2.264

MEAN PROFILE TABULATION
SURVEY NORMAL TO RAMP SURFACE-20 DEG OFF VERTICAL
X = 0.1143
Z = -.1270E-01
Stagnation Pressure pitot = 0.6909E+06
Stagnation Temperature pitot = 265.4
M ref = 2.790
U ref pitot = 570.0
P wall = 0.8032E+05
TAU wall preston = 272.6

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.4427E-03	1.947	1.015	0.5400	1.012
0.5756E-03	1.985	1.018	0.5462	1.027
0.7303E-03	2.074	1.008	0.5645	1.069
0.8410E-03	2.141	1.006	0.5765	1.097
0.9736E-03	2.194	1.005	0.5853	1.119
0.1239E-02	2.232	1.001	0.5931	1.136
0.1416E-02	2.302	0.9971	0.6050	1.165
0.1615E-02	2.303	0.9945	0.6068	1.168
0.1859E-02	2.323	0.9916	0.6111	1.179
0.2168E-02	2.354	0.9825	0.6181	1.196
0.2434E-02	2.366	0.9803	0.6208	1.204

0.2941E-02	2.437	0.9743	0.6317	1.232
0.3251E-02	2.470	0.9684	0.6384	1.250
0.3627E-02	2.509	0.9660	0.6436	1.264
0.3871E-02	2.516	0.9654	0.6447	1.267
0.4313E-02	2.561	0.9626	0.6511	1.285
0.4646E-02	2.623	0.9578	0.6588	1.306
0.4933E-02	2.699	0.9568	0.6691	1.335
0.5220E-02	2.671	0.9563	0.6649	1.324
0.5509E-02	2.679	0.9547	0.6660	1.327
0.5839E-02	2.765	0.9528	0.6762	1.356
0.6193E-02	2.766	0.9475	0.6785	1.363
0.6502E-02	2.808	0.9456	0.6834	1.377
0.6835E-02	2.885	0.9468	0.6908	1.398
0.7211E-02	2.882	0.9449	0.6918	1.402
0.7610E-02	2.946	0.9427	0.6991	1.423
0.7897E-02	3.017	0.9411	0.7063	1.444
0.8273E-02	3.019	0.9415	0.7061	1.444
0.8672E-02	3.129	0.9414	0.7164	1.476
0.8915E-02	3.206	0.9411	0.7230	1.497
0.9002E-02	3.257	0.9410	0.7275	1.512
0.9202E-02	3.297	0.9400	0.7317	1.526
0.9423E-02	3.423	0.9385	0.7427	1.561
0.9578E-02	3.440	0.9375	0.7440	1.565
0.9667E-02	3.457	0.9368	0.7464	1.572
0.9888E-02	3.503	0.9372	0.7500	1.582
0.1009E-01	3.410	0.9380	0.7423	1.558
0.1040E-01	3.485	0.9391	0.7483	1.575
0.1075E-01	3.481	0.9396	0.7482	1.575
0.1099E-01	3.809	0.9399	0.7744	1.660
0.1110E-01	3.718	0.9397	0.7669	1.635
0.1121E-01	3.823	0.9393	0.7754	1.664
0.1144E-01	3.853	0.9385	0.7775	1.671
0.1179E-01	4.004	0.9374	0.7888	1.710
0.1201E-01	4.066	0.9386	0.7929	1.724
0.1212E-01	4.023	0.9391	0.7898	1.713
0.1245E-01	4.140	0.9409	0.7978	1.742
0.1261E-01	4.070	0.9417	0.7927	1.724
0.1276E-01	4.248	0.9417	0.8048	1.766
0.1298E-01	4.309	0.9417	0.8092	1.782
0.1321E-01	4.404	0.9417	0.8149	1.804
0.1336E-01	4.247	0.9417	0.8045	1.766
0.1354E-01	4.375	0.9420	0.8127	1.797
0.1380E-01	4.425	0.9423	0.8144	1.804
0.1405E-01	4.536	0.9431	0.8219	1.832
0.1424E-01	4.640	0.9442	0.8273	1.853
0.1451E-01	4.603	0.9457	0.8252	1.846
0.1482E-01	4.695	0.9474	0.8291	1.860
0.1513E-01	4.726	0.9481	0.8310	1.867
0.1544E-01	4.883	0.9486	0.8403	1.903
0.1582E-01	4.907	0.9486	0.8422	1.910
0.1610E-01	5.067	0.9487	0.8492	1.938
0.1641E-01	4.951	0.9503	0.8437	1.917
0.1659E-01	5.039	0.9513	0.8471	1.931
0.1688E-01	5.173	0.9522	0.8540	1.959
0.1719E-01	5.254	0.9528	0.8573	1.974
0.1748E-01	5.320	0.9522	0.8609	1.988
0.1779E-01	5.280	0.9516	0.8594	1.981
0.1803E-01	5.309	0.9512	0.8612	1.988
0.1836E-01	5.294	0.9521	0.8614	1.988
0.1876E-01	5.390	0.9536	0.8647	2.002
0.1915E-01	5.354	0.9558	0.8624	1.995
0.1969E-01	5.396	0.9588	0.8616	1.995
0.2026E-01	5.425	0.9603	0.8631	2.002
0.2079E-01	5.461	0.9615	0.8652	2.009
0.2139E-01	5.453	0.9640	0.8640	2.002
0.2196E-01	5.467	0.9682	0.8633	2.002
0.2256E-01	5.467	0.9725	0.8604	1.995
0.2336E-01	5.476	0.9715	0.8610	2.002
0.2398E-01	5.449	0.9746	0.8587	1.988
0.2455E-01	5.438	0.9751	0.8598	1.988
0.2506E-01	5.442	0.9748	0.8599	1.988
0.2578E-01	5.403	0.9737	0.8569	1.981
0.2611E-01	5.418	0.9741	0.8580	1.988
0.2680E-01	5.403	0.9738	0.8556	1.981
0.2715E-01	5.392	0.9735	0.8555	1.981
0.2786E-01	5.371	0.9701	0.8553	1.981
0.2809E-01	5.371	0.9691	0.8553	1.981
0.2868E-01	5.342	0.9676	0.8536	1.974
0.2911E-01	5.324	0.9680	0.8537	1.974
0.2979E-01	5.349	0.9686	0.8539	1.974
0.3038E-01	5.366	0.9662	0.8559	1.981
0.3111E-01	5.367	0.9629	0.8583	1.988
0.3200E-01	5.386	0.9639	0.8589	1.988
0.3284E-01	5.392	0.9605	0.8590	1.995
0.3371E-01	5.375	0.9570	0.8574	1.995
0.3465E-01	5.349	0.9560	0.8563	1.988
0.3548E-01	5.354	0.9529	0.8586	1.995
0.3632E-01	5.336	0.9491	0.8580	1.995
0.3724E-01	5.306	0.9480	0.8574	1.995
0.3777E-01	5.332	0.9471	0.8578	1.995
0.3805E-01	5.320	0.9462	0.8580	1.995
0.3840E-01	5.304	0.9444	0.8582	1.995
0.3884E-01	5.291	0.9422	0.8585	1.995
0.3965E-01	5.306	0.9383	0.8597	2.002
0.4044E-01	5.294	0.9298	0.8606	2.009
0.4128E-01	5.274	0.8905	0.8709	2.051
0.4219E-01	5.046	0.7477	0.9060	2.207
0.4254E-01	4.526	0.6713	0.9059	2.207
0.4254E-01	4.348	0.6713	0.8954	2.158
0.4260E-01	4.265	0.6583	0.8954	2.158
0.4265E-01	4.122	0.6476	0.8907	2.136

MEAN PROFILE TABULATION FOR 24 DEGREE CORNER
SURVEY IS 5.5 DEGREES OFF VERTICAL

X		= -.6350E-01
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6936E+06
Stagnation Temperature	pitot	= 245.0
M ref		= 2.840
U ref	pitot	= 551.4
P wall		= 0.2115E+05
TAU wall	preston	=

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.4343E-03	2.785	1.082	0.6407	1.257
0.7198E-03	3.252	1.082	0.6874	1.388
0.7948E-03	3.564	1.082	0.7155	1.469
0.1080E-02	3.801	1.082	0.7331	1.526
0.1336E-02	3.942	1.082	0.7422	1.558
0.1366E-02	4.046	1.082	0.7501	1.582
0.1583E-02	4.190	1.082	0.7612	1.618
0.1756E-02	4.288	1.082	0.7679	1.639
0.1981E-02	4.336	1.082	0.7713	1.650
0.2147E-02	4.512	1.082	0.7827	1.689
0.2364E-02	4.574	1.082	0.7855	1.699
0.2462E-02	4.679	1.082	0.7925	1.724
0.2898E-02	4.790	1.082	0.7983	1.745
0.3086E-02	4.899	1.082	0.8047	1.768
0.3183E-02	5.055	1.082	0.8145	1.804
0.3574E-02	5.098	1.082	0.8164	1.811
0.3800E-02	5.254	1.082	0.8241	1.839
0.4100E-02	5.372	1.082	0.8295	1.860
0.4265E-02	5.443	1.082	0.8330	1.874
0.4641E-02	5.599	1.082	0.8416	1.910
0.5197E-02	5.859	1.082	0.8517	1.952
0.6068E-02	6.105	1.082	0.8632	2.002
0.6721E-02	6.384	1.082	0.8748	2.051
0.7389E-02	6.587	1.082	0.8823	2.087
0.7816E-02	6.800	1.082	0.8901	2.122
0.8395E-02	6.965	1.082	0.8963	2.151
0.9017E-02	7.301	1.082	0.9081	2.207

0.9611E-02	7.495	1.082	0.9134	2.235
0.1018E-01	7.646	1.082	0.9180	2.264
0.1078E-01	7.902	1.082	0.9249	2.299
0.1146E-01	8.134	1.082	0.9317	2.335
0.1191E-01	8.389	1.082	0.9390	2.377
0.1270E-01	8.696	1.082	0.9461	2.420
0.1331E-01	8.923	1.082	0.9529	2.455
0.1409E-01	9.160	1.082	0.9587	2.490
0.1484E-01	9.363	1.082	0.9629	2.519
0.1588E-01	9.888	1.082	0.9745	2.597
0.1669E-01	10.20	1.082	0.9803	2.639
0.1766E-01	10.46	1.082	0.9849	2.674
0.1825E-01	10.80	1.082	0.9906	2.717
0.1898E-01	10.82	1.082	0.9896	2.717
0.1952E-01	11.08	1.082	0.9942	2.752
0.2025E-01	11.31	1.082	0.9976	2.781
0.2090E-01	11.37	1.082	0.9980	2.788
0.2164E-01	11.47	1.082	0.9998	2.802
0.2261E-01	11.62	1.082	1.002	2.823
0.2339E-01	11.73	1.082	1.003	2.837
0.2432E-01	11.77	1.082	1.003	2.844
0.2504E-01	11.78	1.082	1.002	2.844

MEAN PROFILE TABULATION FOR 24 DEGREE CORNER
SURVEY IS 5.5 DEGREES OFF VERTICAL

X		= -.3048E-01
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.7019E+06
Stagnation Temperature	pitot	= 250.1
M ref		= 2.840
U ref	pitot	= 557.1
P wall		= 0.3869E+05
TAU wall	preston	=

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.1905E-03	1.197	1.064	0.2385	0.4136
0.7008E-03	1.231	1.064	0.2635	0.4614
0.1338E-02	1.353	1.063	0.3348	0.5967
0.1962E-02	1.601	1.060	0.4328	0.7900
0.2598E-02	1.990	1.056	0.5290	0.9980
0.3228E-02	2.398	1.045	0.5978	1.161
0.3830E-02	2.716	1.035	0.6410	1.271
0.4481E-02	3.065	1.011	0.6860	1.395
0.5095E-02	3.365	0.9879	0.7206	1.497
0.5763E-02	3.577	0.9363	0.7542	1.604
0.6353E-02	3.791	0.8907	0.7851	1.706
0.6957E-02	3.975	0.8484	0.8122	1.804
0.7592E-02	4.107	0.8039	0.8361	1.896
0.8222E-02	4.244	0.7571	0.8607	1.995
0.8872E-02	4.298	0.7087	0.8804	2.080
0.9474E-02	4.368	0.6746	0.8973	2.158
0.1012E-01	4.412	0.6383	0.9124	2.235
0.1079E-01	4.456	0.6210	0.9207	2.278
0.1141E-01	4.538	0.6063	0.9318	2.335
0.1205E-01	4.577	0.5989	0.9348	2.356
0.1267E-01	4.688	0.5919	0.9435	2.405
0.1330E-01	4.768	0.5916	0.9479	2.427
0.1396E-01	4.874	0.5916	0.9527	2.455
0.1458E-01	5.011	0.5916	0.9583	2.490
0.1525E-01	5.138	0.5916	0.9636	2.526
0.1591E-01	5.244	0.5916	0.9676	2.554
0.1653E-01	5.396	0.5916	0.9727	2.589
0.1720E-01	5.484	0.5916	0.9754	2.611
0.1783E-01	5.598	0.5916	0.9793	2.639
0.1914E-01	5.836	0.5916	0.9873	2.703
0.2039E-01	6.030	0.5916	0.9924	2.745
0.2168E-01	6.143	0.5916	0.9958	2.774
0.2288E-01	6.247	0.5916	0.9983	2.802
0.2429E-01	6.322	0.5916	0.9991	2.816
0.2568E-01	6.360	0.5916	0.9985	2.823

0.2692E-01	6.386	0.5916	0.9990	2.830
0.2832E-01	6.420	0.5916	1.000	2.837
0.2962E-01	6.474	0.5916	1.001	2.851

MEAN PROFILE TABULATION FOR 24 DEGREE CORNER
SURVEY IS 5.5 DEGREES OFF VERTICAL

X		= -.1016E-01
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6950E+06
Stagnation Temperature	pitot	= 255.3
M ref		= 2.840
U ref	pitot	= 562.9
P wall		= 0.4694E+05
TAU wall	preston	=

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.2705E-02	1.132	1.081	0.1492	0.2573
0.3571E-02	1.196	1.081	0.2194	0.3813
0.4359E-02	1.277	1.081	0.2808	0.4932
0.4966E-02	1.360	1.081	0.3287	0.5830
0.5558E-02	1.497	1.081	0.3881	0.6982
0.6149E-02	1.653	1.081	0.4393	0.8018
0.6716E-02	1.760	1.081	0.4691	0.8643
0.7361E-02	1.980	1.081	0.5186	0.9717
0.7859E-02	2.160	1.081	0.5507	1.044
0.8512E-02	2.373	1.081	0.5838	1.122
0.9174E-02	2.629	1.081	0.6180	1.207
0.9718E-02	2.814	1.081	0.6399	1.264
0.1033E-01	3.051	1.081	0.6662	1.335
0.1091E-01	3.289	1.081	0.6888	1.398
0.1159E-01	3.573	1.081	0.7142	1.473
0.1209E-01	3.815	1.081	0.7331	1.529
0.1278E-01	4.028	1.081	0.7490	1.579
0.1346E-01	4.320	1.081	0.7690	1.646
0.1413E-01	4.535	1.081	0.7828	1.692
0.1468E-01	4.759	1.081	0.7976	1.742
0.1534E-01	5.077	1.081	0.8140	1.804
0.1611E-01	5.498	1.081	0.8367	1.889
0.1704E-01	5.801	1.074	0.8528	1.952
0.1804E-01	6.231	1.054	0.8747	2.051
0.1909E-01	6.449	1.008	0.8941	2.143
0.2002E-01	6.510	0.8901	0.9272	2.306
0.2073E-01	6.214	0.7903	0.9424	2.391
0.2107E-01	6.093	0.7392	0.9534	2.455
0.2165E-01	5.809	0.6529	0.9691	2.554
0.2215E-01	5.645	0.5846	0.9858	2.667
0.2260E-01	5.432	0.5231	1.000	2.774
0.2309E-01	5.337	0.4876	1.010	2.851

MEAN PROFILE TABULATION FOR 24 DEGREE CORNER
SURVEY IS 5.5 DEGREES OFF VERTICAL

X		= 0.0000E+00
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.7033E+06
Stagnation Temperature	pitot	= 245.9
M ref		= 2.840
U ref	pitot	= 552.5
P wall		= 0.5142E+05
TAU wall	preston	=

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.1905E-03	1.097	1.038	0.1637	0.2817
0.1712E-02	1.073	1.038	0.1254	0.2170
0.2832E-02	1.071	1.038	0.1218	0.2107
0.3620E-02	1.081	1.038	0.1389	0.2405
0.4796E-02	1.121	1.038	0.1911	0.3325
0.5601E-02	1.180	1.038	0.2472	0.4331
0.6584E-02	1.260	1.038	0.3021	0.5342

0.2692E-01	4.664	0.6425	0.9129	2.292
0.2743E-01	4.291	0.5697	0.9217	2.342
0.2804E-01	4.092	0.4900	0.9451	2.476
0.2865E-01	3.977	0.4479	0.9581	2.554
0.2954E-01	3.933	0.4037	0.9780	2.682
0.3051E-01	3.914	0.3882	0.9849	2.731

MEAN PROFILE TABULATION FOR 24 DEGREE CORNER
SURVEY IS 24.0 DEGREES OFF VERTICAL

X		= 0.3048E-01
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6687E+06
Stagnation Temperature	pitot	= 254.4
M ref		= 2.840
U ref	pitot	= 561.9
P wall		= 0.7288E+05
TAU wall	preston	=

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.1275E-02	1.163	1.050	0.2226	0.3843
0.1990E-02	1.172	1.039	0.2414	0.4185
0.2908E-02	1.198	1.027	0.2715	0.4741
0.3553E-02	1.218	1.020	0.2899	0.5088
0.4442E-02	1.270	1.010	0.3284	0.5811
0.5329E-02	1.384	0.9990	0.3882	0.6982
0.6368E-02	1.548	0.9837	0.4533	0.8311
0.7468E-02	1.733	0.9713	0.5075	0.9482
0.8552E-02	1.979	0.9627	0.5596	1.069
0.9472E-02	2.263	0.9537	0.6090	1.189
0.1041E-01	2.563	0.9423	0.6521	1.303
0.1141E-01	2.872	0.9274	0.6920	1.412
0.1235E-01	3.255	0.9168	0.7345	1.536
0.1323E-01	3.603	0.9069	0.7680	1.643
0.1418E-01	3.978	0.8940	0.7999	1.752
0.1512E-01	4.338	0.8730	0.8308	1.867
0.1573E-01	4.488	0.8630	0.8417	1.910
0.1650E-01	4.791	0.8515	0.8628	1.995
0.1738E-01	5.056	0.8319	0.8843	2.087
0.1825E-01	5.129	0.8125	0.8937	2.129
0.1892E-01	5.254	0.7976	0.9041	2.179
0.1952E-01	5.299	0.7842	0.9095	2.207
0.2031E-01	5.339	0.7665	0.9167	2.243
0.2118E-01	5.340	0.7471	0.9236	2.278
0.2201E-01	5.311	0.7316	0.9248	2.292
0.2296E-01	5.256	0.7175	0.9248	2.306
0.2386E-01	5.211	0.7040	0.9276	2.320
0.2475E-01	5.153	0.6954	0.9234	2.320
0.2558E-01	5.104	0.6892	0.9241	2.320
0.2647E-01	4.975	0.6826	0.9183	2.299
0.2741E-01	4.588	0.6701	0.9028	2.221
0.2761E-01	4.419	0.6671	0.8955	2.186
0.2784E-01	4.330	0.6636	0.8910	2.165
0.2807E-01	4.049	0.6302	0.8880	2.151
0.2840E-01	3.681	0.5491	0.8984	2.200
0.2870E-01	3.551	0.4754	0.9236	2.328
0.2913E-01	3.278	0.3697	0.9635	2.554
0.2959E-01	3.222	0.3393	0.9781	2.646
0.3012E-01	3.142	0.3243	0.9827	2.674
0.3094E-01	3.116	0.3141	0.9871	2.710

MEAN PROFILE TABULATION FOR 24 DEGREE CORNER
SURVEY IS 24.0 DEGREES OFF VERTICAL

X		= 0.6096E-01
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6943E+06
Stagnation Temperature	pitot	= 248.2
M ref		= 2.840
U ref	pitot	= 555.0
P wall		= 0.8638E+05
TAU wall	preston	=

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.7889E-03	1.529	1.026	0.4321	0.7783
0.1548E-02	1.595	1.014	0.4578	0.8311
0.2097E-02	1.614	1.005	0.4663	0.8506
0.2817E-02	1.665	0.9946	0.4839	0.8896
0.3528E-02	1.690	0.9868	0.4930	0.9111
0.4214E-02	1.755	0.9793	0.5121	0.9521
0.4935E-02	1.824	0.9714	0.5296	0.9941
0.5685E-02	1.902	0.9650	0.5463	1.034
0.6337E-02	1.981	0.9599	0.5628	1.073
0.7066E-02	2.109	0.9542	0.5862	1.129
0.7777E-02	2.210	0.9494	0.6032	1.172
0.8458E-02	2.341	0.9472	0.6220	1.221
0.9190E-02	2.527	0.9449	0.6477	1.289
0.9832E-02	2.739	0.9429	0.6732	1.359
0.1093E-01	2.993	0.9382	0.7017	1.441
0.1217E-01	3.314	0.9323	0.7343	1.536
0.1295E-01	3.574	0.9294	0.7583	1.611
0.1393E-01	3.942	0.9279	0.7868	1.706
0.1490E-01	4.169	0.9264	0.8026	1.763
0.1590E-01	4.473	0.9228	0.8233	1.839
0.1686E-01	4.737	0.9182	0.8399	1.903
0.1799E-01	4.979	0.9115	0.8559	1.966
0.1953E-01	5.161	0.8946	0.8686	2.023
0.2049E-01	5.260	0.8833	0.8768	2.058
0.2181E-01	5.308	0.8625	0.8853	2.101
0.2294E-01	5.296	0.8441	0.8867	2.122
0.2431E-01	5.271	0.8119	0.8923	2.158
0.2588E-01	5.212	0.7703	0.9012	2.207
0.2715E-01	5.153	0.7284	0.9114	2.264
0.2850E-01	5.077	0.6707	0.9278	2.349
0.2995E-01	4.976	0.5887	0.9530	2.490
0.3117E-01	4.866	0.4789	0.9920	2.745
0.3228E-01	4.702	0.3506	1.046	3.170
0.3297E-01	4.590	0.2708	1.085	3.584
0.3360E-01	4.283	0.2650	1.076	3.489
0.3386E-01	4.083	0.2650	1.069	3.404
0.3416E-01	3.598	0.2650	1.048	3.191
0.3437E-01	3.184	0.2650	1.025	2.993
0.3465E-01	2.883	0.2650	1.006	2.844
0.3490E-01	2.746	0.2650	0.9962	2.774
0.3523E-01	2.649	0.2650	0.9879	2.717

MEAN PROFILE TABULATION FOR 24 DEGREE CORNER
SURVEY IS 24.0 DEGREES OFF VERTICAL

X		= 0.1016
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6929E+06
Stagnation Temperature	pitot	= 241.4
M ref		= 2.840
U ref	pitot	= 547.4
P wall		= 0.9264E+05
TAU wall	preston	=

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.9898E-03	1.943	1.037	0.5230	0.9902
0.1455E-02	2.052	1.032	0.5454	1.041
0.2274E-02	2.098	1.023	0.5588	1.069
0.2860E-02	2.165	1.018	0.5713	1.097
0.3543E-02	2.238	1.014	0.5839	1.129
0.3947E-02	2.271	1.011	0.5887	1.143
0.4669E-02	2.361	1.007	0.6034	1.179
0.5420E-02	2.438	1.003	0.6137	1.207
0.5989E-02	2.537	0.9994	0.6271	1.242
0.6464E-02	2.653	0.9966	0.6433	1.285
0.7102E-02	2.783	0.9929	0.6588	1.327
0.7981E-02	2.927	0.9888	0.6761	1.373
0.8349E-02	3.064	0.9877	0.6908	1.416

0.9055E-02	3.161	0.9856	0.7006	1.444
0.9624E-02	3.384	0.9839	0.7217	1.508
0.1039E-01	3.569	0.9817	0.7381	1.558
0.1093E-01	3.754	0.9801	0.7537	1.607
0.1159E-01	3.940	0.9782	0.7673	1.653
0.1228E-01	4.108	0.9762	0.7806	1.696
0.1292E-01	4.252	0.9749	0.7914	1.731
0.1359E-01	4.412	0.9749	0.8008	1.768
0.1404E-01	4.535	0.9749	0.8086	1.797
0.1482E-01	4.670	0.9749	0.8158	1.825
0.1547E-01	4.773	0.9749	0.8207	1.846
0.1593E-01	4.881	0.9749	0.8271	1.874
0.1658E-01	4.934	0.9749	0.8294	1.881
0.1741E-01	5.024	0.9749	0.8344	1.903
0.1802E-01	5.053	0.9749	0.8354	1.910
0.1869E-01	5.075	0.9749	0.8352	1.910
0.1912E-01	5.090	0.9749	0.8376	1.917
0.1981E-01	5.111	0.9749	0.8379	1.924
0.2049E-01	5.123	0.9747	0.8365	1.924
0.2107E-01	5.093	0.9738	0.8343	1.917
0.2242E-01	5.086	0.9719	0.8345	1.917
0.2357E-01	5.055	0.9681	0.8338	1.917
0.2494E-01	5.026	0.9621	0.8329	1.917
0.2614E-01	5.007	0.9579	0.8333	1.917
0.2743E-01	4.966	0.9541	0.8311	1.910
0.2865E-01	4.964	0.9536	0.8311	1.910
0.2992E-01	4.929	0.9555	0.8290	1.903
0.3063E-01	4.891	0.9557	0.8271	1.896
0.3114E-01	4.857	0.9534	0.8253	1.889
0.3259E-01	4.770	0.9470	0.8239	1.881
0.3381E-01	4.677	0.9382	0.8203	1.867
0.3510E-01	4.645	0.9268	0.8219	1.874
0.3642E-01	4.636	0.8875	0.8332	1.917
0.3767E-01	4.585	0.8363	0.8456	1.966
0.3889E-01	4.426	0.6797	0.8900	2.165
0.3950E-01	3.884	0.5725	0.9001	2.214
0.3967E-01	3.411	0.5426	0.8806	2.122
0.4011E-01	2.996	0.4653	0.8865	2.151
0.4049E-01	2.616	0.3984	0.8908	2.172
0.4097E-01	2.464	0.3558	0.9036	2.235
0.4153E-01	2.417	0.3283	0.9182	2.313
0.4176E-01	2.407	0.3170	0.9245	2.349
0.4224E-01	2.404	0.2933	0.9421	2.448
0.4348E-01	2.401	0.2471	0.9797	2.682
0.4445E-01	2.401	0.2471	0.9799	2.682

MEAN PROFILE TABULATION FOR 24 DEGREE CORNER
SURVEY IS 24.0 DEGREES OFF VERTICAL

X		= 0.1422
Z		= -.1270E-01
Stagnation Pressure	pitot	= 0.6929E+06
Stagnation Temperature	pitot	= 248.6
M ref		= 2.840
U ref	pitot	= 555.5
P wall		= 0.9109E+05
TAU wall	preston	=

Y	PT/PWALL	PS/PWALL	U/UREF	M
0.7046E-03	2.224	1.033	0.5696	1.108
0.1350E-02	2.482	1.029	0.6093	1.200
0.1951E-02	2.561	1.025	0.6230	1.232
0.2642E-02	2.639	1.021	0.6345	1.260
0.3152E-02	2.714	1.019	0.6439	1.285
0.3716E-02	2.753	1.017	0.6485	1.299
0.4392E-02	2.819	1.014	0.6571	1.320
0.4961E-02	2.912	1.011	0.6684	1.352
0.5781E-02	2.971	1.008	0.6748	1.370
0.6185E-02	3.045	1.007	0.6827	1.391
0.6929E-02	3.137	1.005	0.6914	1.419
0.7605E-02	3.231	1.003	0.7010	1.448
0.8115E-02	3.355	1.001	0.7131	1.483
0.8799E-02	3.476	0.9994	0.7244	1.519
0.9406E-02	3.618	0.9976	0.7374	1.554
0.1001E-01	3.714	0.9958	0.7447	1.582
0.1066E-01	3.830	0.9946	0.7535	1.611
0.1127E-01	4.018	0.9937	0.7680	1.657
0.1195E-01	4.079	0.9926	0.7737	1.674
0.1262E-01	4.233	0.9916	0.7830	1.710
0.1321E-01	4.335	0.9930	0.7898	1.731
0.1391E-01	4.459	0.9951	0.7970	1.759
0.1452E-01	4.612	0.9969	0.8050	1.789
0.1502E-01	4.693	0.9984	0.8097	1.804
0.1567E-01	4.802	1.001	0.8152	1.825
0.1647E-01	4.858	1.005	0.8174	1.839
0.1707E-01	4.927	1.007	0.8199	1.846
0.1760E-01	4.970	1.010	0.8211	1.853
0.1826E-01	5.075	1.013	0.8274	1.874
0.1879E-01	5.071	1.015	0.8242	1.867
0.1957E-01	5.129	1.018	0.8280	1.881
0.2008E-01	5.162	1.021	0.8275	1.881
0.2135E-01	5.202	1.025	0.8282	1.889
0.2275E-01	5.243	1.029	0.8271	1.889
0.2400E-01	5.230	1.031	0.8270	1.889
0.2517E-01	5.228	1.033	0.8248	1.881
0.2644E-01	5.196	1.033	0.8226	1.874
0.2776E-01	5.166	1.033	0.8210	1.867
0.2901E-01	5.108	1.030	0.8185	1.860
0.3040E-01	5.044	1.026	0.8166	1.853
0.3157E-01	4.981	1.024	0.8132	1.839
0.3289E-01	4.937	1.022	0.8110	1.832
0.3416E-01	4.947	1.022	0.8129	1.839
0.3531E-01	4.956	1.022	0.8129	1.839
0.3678E-01	4.935	1.020	0.8131	1.839
0.3800E-01	4.908	1.018	0.8114	1.832
0.3922E-01	4.871	1.015	0.8094	1.825
0.4041E-01	4.838	1.011	0.8092	1.825
0.4176E-01	4.825	1.007	0.8091	1.825
0.4303E-01	4.809	1.003	0.8091	1.825
0.4420E-01	4.799	0.9999	0.8091	1.825
0.4547E-01	4.783	0.9961	0.8110	1.832
0.4686E-01	4.759	0.9920	0.8091	1.825
0.4826E-01	4.742	0.9878	0.8110	1.832
0.4953E-01	4.697	0.9821	0.8091	1.825
0.5093E-01	3.251	0.9450	0.7155	1.508
0.5105E-01	2.821	0.9160	0.6822	1.409
0.5146E-01	2.648	0.8170	0.6979	1.455
0.5177E-01	2.531	0.7422	0.7132	1.501
0.5215E-01	2.506	0.6505	0.7480	1.611
0.5288E-01	2.502	0.4743	0.8347	1.924
0.5410E-01	2.506	0.3298	0.9269	2.349
0.5461E-01	2.506	0.3073	0.9436	2.441

*********************END OF MEAN DATA FILE*************************************

********************ALPHA=8 DEGREES, INCLINED-WIRE SURVEYS********************

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08101.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS VERTICAL
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = -.2540E-01)

X	= -.5080E-01
Z	= -.1270E-01
M ref	= 2.870
U ref hw	= 585.5
RHO ref hw	= 0.7689
TAU wall preston	= 133.5
P wall mean flow	= 0.2300E+05

Y	(rhou)"v" RHO U**2	U Uref	M	Ps Pwall	(u"v") U**2	RHO(u"v") RHOref Uref**2
0.1980E-02	-.2350E-02	0.7407	1.573	0.9818	-.1181E-02	-.3506E-03
0.3261E-02	-.1920E-02	0.7809	1.712	0.9870	-.8837E-03	-.3124E-03
0.4699E-02	-.2716E-02	0.8131	1.832	0.9815	-.1159E-02	-.4666E-03
0.6127E-02	-.2698E-02	0.8404	1.940	0.9747	-.1077E-02	-.4826E-03
0.7575E-02	-.2323E-02	0.8629	2.041	0.9684	-.8713E-03	-.4294E-03
0.9025E-02	-.1941E-02	0.8768	2.109	0.9711	-.6984E-03	-.3687E-03
0.1047E-01	-.2054E-02	0.8946	2.189	0.9660	-.7043E-03	-.3983E-03
0.1191E-01	-.1851E-02	0.9104	2.269	0.9670	-.6052E-03	-.3680E-03
0.1337E-01	-.1399E-02	0.9258	2.352	0.9649	-.4352E-03	-.2839E-03
0.1482E-01	-.1492E-02	0.9393	2.429	0.9665	-.4441E-03	-.3093E-03
0.1626E-01	-.1305E-02	0.9450	2.464	0.9713	-.3805E-03	-.2742E-03
0.1772E-01	-.1094E-02	0.9590	2.554	0.9764	-.3031E-03	-.2357E-03
0.1917E-01	-.7916E-03	0.9657	2.609	0.9800	-.2127E-03	-.1733E-03
0.2062E-01	-.8539E-03	0.9747	2.669	0.9826	-.2218E-03	-.1897E-03
0.2209E-01	-.5467E-03	0.9848	2.738	0.9827	-.1367E-03	-.1231E-03
0.2354E-01	-.4650E-03	0.9885	2.766	0.9822	-.1145E-03	-.1051E-03
0.2496E-01	-.2569E-03	0.9905	2.787	0.9815	-.6255E-04	-.5826E-04
0.2640E-01	-.1024E-03	0.9954	2.834	0.9792	-.2431E-04	-.2335E-04
0.2786E-01	-.1546E-03	0.9964	2.849	0.9768	-.3641E-04	-.3527E-04
0.2933E-01	-.8712E-04	0.9973	2.859	0.9745	-.2040E-04	-.1986E-04
0.3079E-01	-.5164E-04	0.9973	2.861	0.9750	-.1208E-04	-.1178E-04
0.3223E-01	-.1577E-04	0.9974	2.867	0.9735	-.3679E-05	-.3596E-05
0.3365E-01	-.2153E-05	0.9984	2.872	0.9698	-.5009E-06	-.4895E-06
0.3502E-01	0.1106E-04	0.9984	2.873	0.9696	0.2572E-05	0.2514E-05

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08102.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = 0.2540E-01)

X	= 0.2030E-01
Z	= -.1270E-01
M ref	= 2.870
U ref hw	= 585.8
RHO ref hw	= 0.7680
TAU wall preston	= 145.2
P wall mean flow	= 0.3565E+05

Y	(rhou)"v" RHO U**2	U Uref	M	Ps Pwall	(u"v") U**2	RHO(u"v") RHOref Uref**2
0.1980E-02	-.4296E-02					
0.3200E-02	-.4281E-02	0.7217	1.527	0.9691	-.2215E-02	-.9480E-03
0.4670E-02	-.5240E-02	0.7616	1.662	0.9612	-.2489E-02	-.1252E-02
0.6110E-02	-.5496E-02	0.7968	1.789	0.9470	-.2411E-02	-.1383E-02
0.7530E-02	-.5333E-02	0.8235	1.897	0.9420	-.2186E-02	-.1403E-02
0.8960E-02	-.4554E-02	0.8513	2.005	0.9341	-.1746E-02	-.1242E-02
0.1042E-01	-.3639E-02	0.8755	2.115	0.9296	-.1305E-02	-.1027E-02
0.1188E-01	-.2365E-02	0.8983	2.225	0.9163	-.7936E-03	-.6817E-03
0.1334E-01	-.5777E-03	0.9163	2.315	0.8914	-.1837E-03	-.1662E-03
0.1479E-01	-.1746E-02	0.9348	2.415	0.7844	-.5238E-03	-.4538E-03
0.1625E-01	-.1787E-02	0.9588	2.557	0.6876	-.4943E-03	-.4209E-03
0.1772E-01	-.1466E-02	0.9772	2.685	0.6442	-.3774E-03	-.3319E-03
0.1916E-01	-.1176E-02	0.9859	2.753	0.6319	-.2918E-03	-.2647E-03
0.2060E-01	-.8757E-03	0.9916	2.793	0.6303	-.2125E-03	-.1979E-03
0.2205E-01	-.7794E-03	0.9936	2.823	0.6293	-.1861E-03	-.1768E-03
0.2351E-01	-.4235E-03	0.9958	2.849	0.6286	-.9973E-04	-.9635E-04
0.2497E-01	-.2469E-03	0.9965	2.864	0.6288	-.5768E-04	-.5633E-04
0.2642E-01	-.1202E-03	0.9970	2.866	0.6289	-.2804E-04	-.2743E-04
0.2787E-01	-.6086E-04	0.9984	2.871	0.6276	-.1416E-04	-.1387E-04
0.2932E-01	-.3062E-04	0.9984	2.873	0.6251	-.7119E-05	-.6956E-05
0.3071E-01	-.3006E-04					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08103.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = 0.2540E-01)

X	= 0.3040E-01
Z	= -.1270E-01
M ref	= 2.870
U ref hw	= 585.9
RHO ref hw	= 0.7677
TAU wall preston	= 159.9
P wall mean flow	= 0.3623E+05

Y	(rhou)"v" RHO U**2	U Uref	M	Ps Pwall	(u"v") U**2	RHO(u"v") RHOref Uref**2
0.1980E-02	-.4165E-02					
0.3230E-02	-.4041E-02	0.7226	1.530	0.9689	-.2087E-02	-.9108E-03
0.4680E-02	-.4919E-02	0.7619	1.663	0.9611	-.2335E-02	-.1195E-02
0.6110E-02	-.5296E-02	0.7968	1.789	0.9470	-.2323E-02	-.1354E-02
0.7530E-02	-.5302E-02	0.8235	1.897	0.9420	-.2173E-02	-.1418E-02
0.8980E-02	-.4939E-02	0.8515	2.006	0.9340	-.1892E-02	-.1369E-02
0.1044E-01	-.4096E-02	0.8758	2.117	0.9295	-.1467E-02	-.1176E-02
0.1191E-01	-.3797E-02	0.8987	2.227	0.9159	-.1273E-02	-.1112E-02
0.1336E-01	-.2856E-02	0.9164	2.316	0.8908	-.9082E-03	-.8349E-03
0.1481E-01	-.2007E-02	0.9352	2.418	0.7823	-.6012E-03	-.5289E-03
0.1629E-01	0.8760E-03	0.9593	2.560	0.6858	0.2419E-03	0.2092E-03
0.1772E-01	-.4071E-03	0.9772	2.685	0.6442	-.1048E-03	-.9368E-04
0.1916E-01	-.1043E-02	0.9859	2.753	0.6319	-.2586E-03	-.2384E-03
0.2062E-01	-.8730E-03	0.9916	2.793	0.6302	-.2118E-03	-.2004E-03
0.2208E-01	-.6483E-03	0.9936	2.823	0.6293	-.1548E-03	-.1494E-03
0.2353E-01	-.3319E-03	0.9958	2.849	0.6286	-.7813E-04	-.7673E-04
0.2498E-01	-.2025E-03	0.9965	2.864	0.6288	-.4731E-04	-.4695E-04
0.2645E-01	-.7193E-04	0.9970	2.866	0.6289	-.1678E-04	-.1668E-04
0.2781E-01	-.9132E-04	0.9983	2.870	0.6276	-.2126E-04	-.2115E-04
0.2929E-01	-.6229E-04	0.9984	2.873	0.6252	-.1448E-04	-.1438E-04
0.3069E-01	-.2180E-04					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08104.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-8 DEG OFF VERTICAL. X = 0.6604E-01)

X	= 0.6600E-01
Z	= -.1270E-01
M ref	= 2.870
U ref hw	= 585.5
RHO ref hw	= 0.7688
TAU wall preston	= 181.0
P wall mean flow	= 0.3910E+05

Y	(rhou)"v" RHO U**2	U Uref	M	Ps Pwall	(u"v") U**2	RHO(u"v") RHOref Uref**2
0.1980E-02	-.3888E-02	0.6924	1.420	0.9635	-.2153E-02	-.8683E-03
0.3210E-02	-.4595E-02	0.7141	1.491	0.9649	-.2432E-02	-.1084E-02
0.4659E-02	-.4745E-02	0.7497	1.612	0.9667	-.2327E-02	-.1214E-02
0.6090E-02	-.5853E-02	0.7746	1.688	0.9649	-.2736E-02	-.1562E-02
0.7549E-02	-.5841E-02	0.7984	1.775	0.9641	-.2585E-02	-.1630E-02
0.8975E-02	-.6172E-02	0.8248	1.877	0.9652	-.2562E-02	-.1809E-02
0.1041E-01	-.5706E-02	0.8477	1.970	0.9664	-.2235E-02	-.1741E-02
0.1186E-01	-.4770E-02	0.8681	2.058	0.9670	-.1770E-02	-.1506E-02
0.1330E-01	-.3712E-02	0.8843	2.132	0.9669	-.1317E-02	-.1202E-02

0.1476E-01	-.2649E-02	0.9034	2.229	0.9662	-.8869E-03	-.8841E-03
0.1620E-01	-.2624E-02	0.9162	2.296	0.9660	-.8440E-03	-.8929E-03
0.1762E-01	-.1853E-02	0.9317	2.376	0.9641	-.5687E-03	-.6430E-03
0.1903E-01	-.1227E-02	0.9420	2.439	0.9617	-.3632E-03	-.4313E-03
0.2049E-01	-.9593E-03	0.9472	2.483	0.9595	-.2768E-03	-.3400E-03
0.2193E-01	-.6227E-03	0.9490	2.500	0.9577	-.1780E-03	-.2212E-03
0.2339E-01	-.1220E-03	0.9526	2.521	0.9551	-.3443E-04	-.4342E-04
0.2483E-01	-.4066E-04	0.9544	2.539	0.9485	-.1136E-04	-.1443E-04
0.2629E-01	0.9390E-04	0.9644	2.611	0.8765	0.2520E-04	0.3127E-04
0.2775E-01	0.4278E-02	0.9750	2.689	0.6800	0.1099E-02	0.1122E-02
0.2918E-01	0.9719E-03					
0.3062E-01	0.1240E-04					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08105.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-8 DEG OFF VERTICAL. X = 0.1372)
X = 0.1016
Z = -.1270E-01
M ref = 2.870
U ref hw = 583.3
RHO ref hw = 0.7747
TAU wall preston = 198.8
P wall mean flow = 0.3979E+05

Y	(rhou)"v" RHO U**2	U Uref	M	Ps Pwall	(u"v") U**2	RHO(u"v") RHOref Uref**2
0.1980E-02	-.4344E-02	0.7156	1.499	0.9948	-.2288E-02	-.1081E-02
0.3255E-02	-.4190E-02	0.7375	1.576	0.9953	-.2102E-02	-.1098E-02
0.4676E-02	-.5474E-02	0.7611	1.648	0.9916	-.2624E-02	-.1494E-02
0.6127E-02	-.5912E-02	0.7802	1.721	0.9851	-.2707E-02	-.1669E-02
0.7566E-02	-.6551E-02	0.8024	1.804	0.9783	-.2846E-02	-.1915E-02
0.9012E-02	-.5747E-02	0.8217	1.876	0.9779	-.2387E-02	-.1736E-02
0.1046E-01	-.5428E-02	0.8447	1.968	0.9762	-.2129E-02	-.1702E-02
0.1189E-01	-.5325E-02	0.8619	2.044	0.9762	-.1993E-02	-.1719E-02
0.1331E-01	-.4424E-02	0.8733	2.096	0.9769	-.1605E-02	-.1455E-02
0.1474E-01	-.3117E-02	0.8983	2.210	0.9767	-.1055E-02	-.1064E-02
0.1620E-01	-.3100E-02	0.9117	2.277	0.9761	-.1008E-02	-.1079E-02
0.1766E-01	-.2556E-02	0.9216	2.331	0.9755	-.8054E-03	-.9022E-03
0.1911E-01	-.1918E-02	0.9261	2.360	0.9785	-.5941E-03	-.6843E-03
0.2054E-01	-.1076E-02	0.9348	2.410	0.9837	-.3237E-03	-.3909E-03
0.2201E-01	-.6229E-03	0.9395	2.441	0.9881	-.1841E-03	-.2291E-03
0.2345E-01	-.4495E-03	0.9421	2.462	0.9894	-.1312E-03	-.1664E-03
0.2489E-01	-.1476E-03	0.9446	2.481	0.9881	-.4265E-04	-.5482E-04
0.2633E-01	-.4251E-04	0.9451	2.487	0.9844	-.1224E-04	-.1575E-04
0.2779E-01	0.1302E-04	0.9451	2.492	0.9785	0.3738E-05	0.4800E-05
0.2923E-01	0.1107E-04	0.9464	2.503	0.9732	0.3157E-05	0.4068E-05
0.3068E-01	0.1005E-04					
0.3213E-01	0.4472E-05					
0.3356E-01	0.1762E-04					
0.3503E-01	0.1385E-04					
0.3642E-01	0.3938E-04					
0.3781E-01	0.1170E-03					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08106.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-8 DEG OFF VERTICAL. X = 0.1372)
X = 0.1524
Z = -.1270E-01
M ref = 2.870
U ref hw = 585.4
RHO ref hw = 0.7690
TAU wall preston = 207.5
P wall mean flow = 0.4048E+05

Y	(rhou)"v" RHO U**2	U Uref	M	Ps Pwall	(u"v") U**2	RHO(u"v") RHOref Uref**2
0.1980E-02	-.3275E-02	0.7156	1.499	0.9948	-.1725E-02	-.8288E-03
0.3297E-02	-.3987E-02	0.7383	1.578	0.9952	-.1997E-02	-.1064E-02
0.4727E-02	-.5164E-02	0.7618	1.651	0.9914	-.2471E-02	-.1435E-02
0.6147E-02	-.5170E-02	0.7805	1.722	0.9850	-.2365E-02	-.1485E-02
0.7572E-02	-.5277E-02	0.8025	1.804	0.9783	-.2292E-02	-.1570E 02
0.9031E-02	-.5921E-02	0.8220	1.877	0.9779	-.2457E-02	-.1821E-02
0.1049E-01	-.5509E-02	0.8450	1.970	0.9762	-.2159E-02	-.1758E-02
0.1194E-01	-.5172E-02	0.8621	2.046	0.9763	-.1934E-02	-.1699E-02
0.1337E-01	-.4245E-02	0.8740	2.099	0.9770	-.1537E-02	-.1422E-02
0.1484E-01	-.4564E-02	0.8994	2.216	0.9767	-.1540E-02	-.1588E-02
0.1629E-01	-.3633E-02	0.9128	2.283	0.9761	-.1178E-02	-.1288E-02
0.1772E-01	-.2415E-02	0.9224	2.335	0.9755	-.7592E-03	-.8684E-03
0.1917E-01	-.1783E-02	0.9268	2.363	0.9788	-.5513E-03	-.6481E-03
0.2055E-01	-.1094E-02	0.9348	2.410	0.9837	-.3294E-03	-.4046E-03
0.2199E-01	-.8703E-03	0.9395	2.441	0.9880	-.2572E-03	-.3256E-03
0.2344E-01	-.5563E-03	0.9420	2.462	0.9894	-.1624E-03	-.2095E-03
0.2489E-01	-.4917E-03	0.9446	2.481	0.9881	-.1420E-03	-.1857E-03
0.2632E-01	-.1791E-03	0.9451	2.487	0.9844	-.5157E-04	-.6751E-04
0.2778E-01	-.3562E-04	0.9451	2.492	0.9786	-.1022E-04	-.1336E-04
0.2917E-01	-.2863E-04	0.9465	2.503	0.9733	-.8166E-05	-.1071E-04
0.3065E-01	-.7118E-05					
0.3209E-01	0.4945E-05					
0.3356E-01	0.3257E-05					

********************ALPHA=8 DEGREES, NORMAL-WIRE SURVEYS********************

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08N01.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS VERTICAL
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = -.2540E-01)
X = -.5080E-01
Z = -.1270E-01
M ref = 2.870
U ref hw = 568.1
RHO ref hw = 0.8167
TAU wall preston = 133.5
P wall mean flow = 0.2300E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.1374					
0.4782E-03	0.1356					
0.1952E-02	0.1489	0.7396	1.570	0.9819	0.6248E-02	0.1847E-02
0.3395E-02	0.1483	0.7856	1.729	0.9876	0.5061E-02	0.1826E-02
0.4866E-02	0.1453	0.8171	1.846	0.9804	0.4188E-02	0.1710E-02
0.6307E-02	0.1410	0.8441	1.955	0.9739	0.3436E-02	0.1563E 02
0.7762E-02	0.1425	0.8656	2.054	0.9683	0.3101E-02	0.1548E-02
0.9224E-02	0.1365	0.8794	2.120	0.9708	0.2620E-02	0.1397E-02
0.1068E-01	0.1341	0.8961	2.197	0.9661	0.2302E-02	0.1311E-02
0.1211E-01	0.1346	0.9127	2.281	0.9671	0.2092E-02	0.1286E-02
0.1356E-01	0.1305	0.9273	2.361	0.9645	0.1786E-02	0.1173E-02
0.1502E-01	0.1256	0.9406	2.436	0.9671	0.1512E-02	0.1060E-02
0.1649E-01	0.1198	0.9463	2.472	0.9722	0.1319E-02	0.9570E-03
0.1793E-01	0.1136	0.9602	2.563	0.9769	0.1066E-02	0.8356E-03
0.1939E-01	0.9739E-01	0.9663	2.614	0.9805	0.7382E-03	0.6044E-03
0.2085E-01	0.8896E-01	0.9761	2.679	0.9828	0.5720E-03	0.4929E-03
0.2230E-01	0.6768E-01	0.9864	2.750	0.9825	0.3057E-03	0.2774E-03
0.2376E-01	0.4957E-01	0.9884	2.766	0.9822	0.1610E-03	0.1478E-03
0.2521E-01	0.3545E-01	0.9919	2.799	0.9811	0.7938E-04	0.7454E-04
0.2663E-01	0.2607E-01	0.9957	2.838	0.9788	0.4111E-04	0.3959E-04
0.2807E-01	0.1664E-01	0.9965	2.851	0.9764	0.1651E-04	0.1601E-04
0.2954E-01	0.1362E-01	0.9973	2.859	0.9746	0.1096E 04	0.1067E-04
0.3099E-01	0.1275E-01	0.9973	2.861	0.9749	0.9582E-05	0.9343E 05
0.3245E-01	0.1281E-01	0.9975	2.868	0.9729	0.9607E-05	0.9390E 05
0.3391E-01	0.1308E-01	0.9986	2.873	0.9691	0.9959E 05	0.9731E 05
0.3538E-01	0.1210E 01	0.9984	2.873	0.9698	0.8520E-05	0.8333E 05
0.3683E-01	0.1184E 01	0.9984	2.876	0.9717	0.8134E-05	0.7985E 05

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08N02.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS VERTICAL
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = -.2540E-01)

X	= -.2540E-01
Z	= -.1270E-01
M ref	= 2.870
U ref hw	= 572.4
RHO ref hw	= 0.8043
TAU wall preston	= 133.5
P wall mean flow	= 0.2300E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.8558E-01					
0.1190E-03	0.8362E-01					
0.4628E-03	0.1335					
0.1935E-02	0.1523	0.7390	1.568	0.9819	0.6553E-02	0.1932E-02
0.3395E-02	0.1614	0.7856	1.730	0.9876	0.5994E-02	0.2163E-02
0.4852E-02	0.1532	0.8168	1.845	0.9805	0.4662E-02	0.1902E-02
0.6311E-02	0.1458	0.8441	1.956	0.9739	0.3672E-02	0.1671E-02
0.7767E-02	0.1489	0.8656	2.054	0.9683	0.3385E-02	0.1690E-02
0.9230E-02	0.1469	0.8795	2.121	0.9708	0.3033E-02	0.1618E-02
0.1068E-01	0.1458	0.8961	2.197	0.9661	0.2721E-02	0.1550E-02
0.1212E-01	0.1445	0.9129	2.281	0.9671	0.2410E-02	0.1482E-02
0.1357E-01	0.1395	0.9274	2.361	0.9645	0.2040E-02	0.1340E-02
0.1503E-01	0.1324	0.9406	2.436	0.9671	0.1679E-02	0.1178E-02
0.1650E-01	0.1327	0.9465	2.473	0.9722	0.1615E-02	0.1174E-02
0.1795E-01	0.1205	0.9603	2.564	0.9770	0.1198E-02	0.9399E-03
0.1941E-01	0.1105	0.9664	2.615	0.9805	0.9498E-03	0.7779E-03
0.2087E-01	0.9620E-01	0.9763	2.680	0.9828	0.6682E-03	0.5762E-03
0.2232E-01	0.7556E-01	0.9866	2.751	0.9825	0.3806E-03	0.3456E-03
0.2379E-01	0.5809E-01	0.9884	2.766	0.9822	0.2211E-03	0.2030E-03
0.2524E-01	0.4511E-01	0.9920	2.800	0.9811	0.1283E-03	0.1206E-03
0.2668E-01	0.3238E-01	0.9957	2.838	0.9788	0.6339E-04	0.6106E-04
0.2810E-01	0.2152E-01	0.9965	2.851	0.9763	0.2760E-04	0.2677E-04
0.2958E-01	0.1569E-01	0.9973	2.859	0.9747	0.1455E-04	0.1416E-04
0.3104E-01	0.1234E-01	0.9973	2.862	0.9748	0.8973E-05	0.8751E-05
0.3250E-01	0.1325E-01	0.9976	2.868	0.9728	0.1028E-04	0.1004E-04
0.3395E-01	0.1335E-01	0.9987	2.873	0.9690	0.1037E-04	0.1014E-04
0.3543E-01	0.1287E-01	0.9983	2.873	0.9698	0.9639E-05	0.9427E-05

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08N03.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS VERTICAL
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = -.2540E-01)

X	= -.1520E-01
Z	= -.1270E-01
M ref	= 2.870
U ref hw	= 571.7
RHO ref hw	= 0.8064
TAU wall preston	= 132.2
P wall mean flow	= 0.2300E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.1481					
0.1558E-02	0.1514	0.7196	1.507	0.9829	0.6989E-02	0.1907E-02
0.2976E-02	0.1471	0.7712	1.677	0.9855	0.5322E-02	0.1802E-02
0.4451E-02	0.1426	0.8088	1.816	0.9833	0.4190E-02	0.1661E-02
0.5887E-02	0.1444	0.8356	1.918	0.9756	0.3776E-02	0.1656E-02
0.7331E-02	0.1397	0.8579	2.018	0.9694	0.3118E-02	0.1504E-02
0.8779E-02	0.1381	0.8738	2.097	0.9709	0.2762E-02	0.1440E-02
0.1024E 01	0.1362	0.8922	2.178	0.9665	0.2430E-02	0.1361E-02
0.1169E-01	0.1341	0.9077	2.255	0.9670	0.2144E-02	0.1288E-02
0.1314E 01	0.1305	0.9241	2.343	0.9653	0.1825E-02	0.1181E-02
0.1460E-01	0.1248	0.9371	2.416	0.9660	0.1528E-02	0.1053E-02
0.1606E 01	0.1198	0.9443	2.460	0.9705	0.1338E-02	0.9597E-03
0.1749E-01	0.1120	0.9577	2.544	0.9756	0.1059E-02	0.8169E-03
0.1896E-01	0.1021	0.9650	2.603	0.9795	0.8215E-03	0.6664E-03
0.2041E-01	0.8514E-01	0.9733	2.660	0.9824	0.5354E-03	0.4547E-03
0.2187E-01	0.6740E-01	0.9832	2.727	0.9829	0.3110E-03	0.2777E-03
0.2332E-01	0.5195E-01	0.9884	2.764	0.9822	0.1771E-03	0.1625E-03
0.2475E-01	0.3578E-01	0.9893	2.777	0.9818	0.8284E-04	0.7664E-04
0.2618E-01	0.2458E-01	0.9950	2.829	0.9796	0.3690E-04	0.3535E-04
0.2764E-01	0.1968E-01	0.9962	2.847	0.9771	0.2319E-04	0.2244E-04
0.2909E-01	0.1511E-01	0.9972	2.858	0.9747	0.1351E-04	0.1314E-04
0.3056E-01	0.1245E-01	0.9973	2.859	0.9752	0.9155E-05	0.8919E-05
0.3202E-01	0.1295E-01	0.9972	2.866	0.9740	0.9835E-05	0.9613E-05
0.3347E-01	0.1328E-01	0.9983	2.871	0.9703	0.1028E-04	0.1005E-04
0.3494E-01	0.1276E-01	0.9985	2.873	0.9695	0.9475E-05	0.9264E-05
0.3640E-01	0.1324E-01	0.9983	2.874	0.9709	0.1019E-04	0.9983E-05

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08N04.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = 0.0000E+00)

X	= -.5100E-02
Z	= -.1270E-01
M ref	= 2.870
U ref hw	= 575.2
RHO ref hw	= 0.7966
TAU wall preston	= 122.9
P wall mean flow	= 0.2300E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.1557					
0.1493E-02	0.1528					
0.2966E-02	0.1512	0.7543	1.625	0.7974	0.6010E-02	0.1545E-02
0.4438E-02	0.1494	0.8046	1.807	0.7398	0.4656E-02	0.1374E-02
0.5915E-02	0.1425	0.8352	1.930	0.7201	0.3621E-02	0.1187E-02
0.7359E-02	0.1459	0.8517	2.004	0.7168	0.3462E-02	0.1217E-02
0.8805E-02	0.1432	0.8760	2.114	0.7134	0.2908E-02	0.1132E-02
0.1027E-01	0.1397	0.8904	2.182	0.7116	0.2542E-02	0.1053E-02
0.1173E-01	0.1381	0.9058	2.260	0.7119	0.2258E-02	0.1003E-02
0.1319E-01	0.1347	0.9181	2.321	0.7122	0.1997E-02	0.9356E-03
0.1464E-01	0.1329	0.9352	2.414	0.7109	0.1739E-02	0.8798E-03
0.1612E-01	0.1241	0.9458	2.478	0.7116	0.1405E-02	0.7500E-03
0.1757E-01	0.1176	0.9540	2.532	0.7151	0.1184E-02	0.6633E-03
0.1901E-01	0.1042	0.9651	2.598	0.7167	0.8616E-03	0.5090E-03
0.2048E-01	0.8768E-01	0.9746	2.656	0.7173	0.5705E-03	0.3527E-03
0.2194E-01	0.7452E-01	0.9858	2.732	0.7170	0.3780E-03	0.2472E-03
0.2341E-01	0.5421E-01	0.9877	2.757	0.7182	0.1946E-03	0.1297E-03
0.2486E-01	0.3610E-01	0.9914	2.800	0.7190	0.8217E-04	0.5661E-04
0.2630E-01	0.2304E-01	0.9924	2.820	0.7196	0.3275E-04	0.2290E-04
0.2771E-01	0.1855E-01	0.9948	2.842	0.7186	0.2072E-04	0.1469E-04
0.2919E-01	0.1272E-01	0.9965	2.850	0.7173	0.9657E-05	0.6874E-05
0.3066E-01	0.1331E-01	0.9966	2.858	0.7161	0.1048E-04	0.7489E-05
0.3212E-01	0.1212E-01	0.9959	2.859	0.7158	0.8681E-05	0.6205E-05
0.3356E-01	0.1223E-01	0.9962	2.864	0.7158	0.8789E-05	0.6305E-05
0.3501E-01	0.1175E-01	0.9969	2.866	0.7159	0.8097E-05	0.5816E-05
0.3649E-01	0.1232E-01	0.9975	2.866	0.7158	0.8901E-05	0.6394E-05
0.3794E-01	0.1232E-01	0.9973	2.866	0.7151	0.8901E-05	0.6387E-05
0.3938E-01	0.1183E-01	0.9969	2.866	0.7138	0.8207E-05	0.5879E-05
0.4084E-01	0.1160E-01	0.9962	2.862	0.7128	0.7928E-05	0.5654E-05

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08N05.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR VERTICAL. X = 0.0000E+00)

X	= -.2500E-02
Z	= -.1270E-01
M ref	= 2.870
U ref hw	= 575.0
RHO ref hw	= 0.7971
TAU wall preston	= 123.7
P wall mean flow	= 0.2346E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.1531					
0.6620E-03	0.1508					
0.2165E-02	0.1506					
0.3629E-02	0.1478	0.7803	1.715	0.7637	0.5118E-02	0.1433E-02
0.5104E-02	0.1428	0.8203	1.869	0.7279	0.3930E-02	0.1245E-02
0.6567E-02	0.1441	0.8425	1.963	0.7186	0.3554E-02	0.1226E-02
0.8010E-02	0.1448	0.8660	2.069	0.7153	0.3144E-02	0.1199E-02
0.9464E-02	0.1413	0.8820	2.141	0.7124	0.2736E-02	0.1114E-02
0.1093E-01	0.1403	0.8983	2.221	0.7115	0.2444E-02	0.1069E-02
0.1238E-01	0.1379	0.9111	2.286	0.7121	0.2183E-02	0.1012E-02
0.1383E-01	0.1337	0.9269	2.368	0.7119	0.1859E-02	0.9245E-03
0.1530E-01	0.1280	0.9393	2.439	0.7102	0.1566E-02	0.8240E-03
0.1677E-01	0.1233	0.9498	2.504	0.7131	0.1346E-02	0.7496E-03
0.1821E-01	0.1107	0.9594	2.564	0.7159	0.1011E-02	0.5930E-03
0.1966E-01	0.9642E-01	0.9686	2.618	0.7173	0.7208E-03	0.4415E-03
0.2113E-01	0.8276E-01	0.9802	2.693	0.7171	0.4872E-03	0.3158E-03
0.2259E-01	0.6207E-01	0.9859	2.736	0.7175	0.2611E-03	0.1748E-03
0.2405E-01	0.4396E-01	0.9899	2.781	0.7187	0.1245E-03	0.8624E-04
0.2550E-01	0.2929E-01	0.9921	2.812	0.7193	0.5340E-04	0.3785E-04
0.2693E-01	0.2468E-01	0.9932	2.829	0.7194	0.3721E-04	0.2669E-04
0.2836E-01	0.1746E-01	0.9956	2.846	0.7180	0.1827E-04	0.1324E-04
0.2984E-01	0.1300E-01	0.9967	2.854	0.7168	0.1005E-04	0.7308E-05
0.3129E-01	0.1187E-01	0.9963	2.859	0.7159	0.8327E-05	0.6072E-05
0.3276E-01	0.1131E-01	0.9959	2.861	0.7157	0.7546E-05	0.5508E-05
0.3420E-01	0.1134E-01	0.9964	2.866	0.7158	0.7541E-05	0.5526E-05
0.3567E-01	0.1164E-01	0.9973	2.866	0.7159	0.7946E-05	0.5822E-05
0.3713E-01	0.1208E-01	0.9976	2.866	0.7156	0.8558E-05	0.6268E-05
0.3859E-01	0.1167E-01	0.9971	2.866	0.7146	0.7987E-05	0.5842E-05
0.4005E-01	0.1215E-01	0.9967	2.865	0.7132	0.8664E-05	0.6322E-05

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08N06.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = 0.0000E+00)

```
X                  = 0.0000E+00
Z                  = -.1270E-01
M ref              =  2.870
U   ref hw         =  573.6
RHO ref hw         = 0.8010
TAU wall preston   =  103.9
P wall mean flow   = 0.3151E+05
```

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.1605					
0.1332E-02	0.1669					
0.2545E-02	0.1328	0.7368	1.566	0.8256	0.4992E-02	0.1692E-02
0.3791E-02	0.1429	0.7866	1.737	0.7561	0.4651E-02	0.1777E-02
0.4998E-02	0.1380	0.8183	1.861	0.7291	0.3710E-02	0.1567E-02
0.6207E-02	0.1385	0.8385	1.945	0.7194	0.3358E-02	0.1530E-02
0.7406E-02	0.1378	0.8527	2.008	0.7167	0.3070E-02	0.1485E-02
0.8610E-02	0.1388	0.8737	2.103	0.7139	0.2768E-02	0.1463E-02
0.9828E-02	0.1388	0.8849	2.155	0.7120	0.2594E-02	0.1436E-02
0.1104E-01	0.1380	0.8992	2.226	0.7115	0.2350E-02	0.1387E-02
0.1226E-01	0.1326	0.9101	2.281	0.7121	0.2030E-02	0.1259E-02
0.1345E-01	0.1336	0.9210	2.335	0.7121	0.1930E-02	0.1254E-02
0.1465E-01	0.1265	0.9353	2.414	0.7109	0.1575E-02	0.1092E-02
0.1581E-01	0.1231	0.9433	2.463	0.7110	0.1407E-02	0.1016E-02
0.1702E-01	0.1197	0.9509	2.512	0.7138	0.1256E-02	0.9468E-03
0.1824E-01	0.1159	0.9596	2.565	0.7159	0.1107E-02	0.8727E-03
0.1945E-01	0.1079	0.9674	2.611	0.7171	0.9096E-03	0.7443E-03
0.2066E-01	0.9388E-01	0.9761	2.666	0.7173	0.6467E-03	0.5517E-03
0.2187E-01	0.8174E-01	0.9858	2.732	0.7170	0.4551E-03	0.4074E-03
0.2306E 01	0.7063E 01	0.9865	2.744	0.7179	0.3352E-03	0.3032E-03
0.2429E 01	0.5082E 01	0.9903	2.787	0.7188	0.1653E-03	0.1545E-03
0.2550E-01	0.4404E 01	0.9921	2.812	0.7193	0.1207E-03	0.1149E-03
0.2671E-01	0.2977E 01	0.9928	2.825	0.7196	0.5418E-04	0.5209E-04
0.2790E-01	0.2285E-01	0.9952	2.844	0.7184	0.3136E-04	0.3051E-04
0.2911E-01	0.1820E-01	0.9964	2.850	0.7174	0.1978E-04	0.1928E-04
0.3033E-01	0.1502E-01	0.9966	2.856	0.7164	0.1337E-04	0.1308E-04
0.3153E-01	0.1318E-01	0.9962	2.859	0.7159	0.1027E-04	0.1005E-04
0.3272E-01	0.1164E-01	0.9959	2.860	0.7157	0.7995E-05	0.7836E-05
0.3393E-01	0.1204E-01	0.9963	2.866	0.7158	0.8503E-05	0.8366E-05
0.3514E-01	0.1754E-01	0.9970	2.866	0.7159	0.1804E-04	0.1776E-04

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08N07.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = 0.5080E-02)

```
X                  = 0.5100E-02
Z                  = -.1270E-01
M ref              =  2.870
U   ref hw         =  580.2
RHO ref hw         = 0.7828
TAU wall preston   =  111.5
P wall mean flow   = 0.3381E+05
```

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.3524E-02					
0.1328E-02	0.1636					
0.2784E-02	0.1621	0.7075	1.480	0.9492	0.8290E-02	0.3096E-02
0.4225E-02	0.1567	0.7590	1.643	0.9176	0.6306E-02	0.2805E-02
0.5700E-02	0.1145	0.8041	1.799	0.8000	0.2761E-02	0.1284E-02
0.7138E-02	0.1252	0.8532	1.995	0.7019	0.2577E-02	0.1293E-02
0.8593E-02	0.1373	0.8720	2.086	0.6738	0.2766E-02	0.1457E-02
0.1004E-01	0.1348	0.8952	2.199	0.6668	0.2319E-02	0.1343E-02
0.1151E-01	0.1299	0.9128	2.285	0.6653	0.1938E-02	0.1209E-02
0.1296E-01	0.1304	0.9243	2.347	0.6623	0.1812E-02	0.1188E-02
0.1441E-01	0.1286	0.9349	2.408	0.6618	0.1639E-02	0.1130E-02
0.1588E-01	0.1235	0.9493	2.496	0.6648	0.1362E-02	0.1013E-02
0.1734E-01	0.1195	0.9577	2.550	0.6663	0.1198E-02	0.9318E-03
0.1878E-01	0.1104	0.9708	2.624	0.6671	0.9385E-03	0.7740E-03
0.2024E-01	0.9808E-01	0.9781	2.671	0.6690	0.7021E-03	0.6016E-03
0.2170E-01	0.8301E-01	0.9840	2.722	0.6731	0.4744E-03	0.4249E-03
0.2317E-01	0.6528E-01	0.9901	2.777	0.6750	0.2757E-03	0.2578E-03
0.2462E-01	0.4996E-01	0.9907	2.793	0.6752	0.1587E-03	0.1501E-03
0.2607E-01	0.3130E-01	0.9938	2.823	0.6741	0.6022E-04	0.5811E-04
0.2749E-01	0.2489E-01	0.9957	2.844	0.6747	0.3724E-04	0.3649E-04
0.2894E-01	0.1779E-01	0.9960	2.851	0.6756	0.1887E-04	0.1861E-04
0.3041E-01	0.1326E-01	0.9974	2.860	0.6755	0.1037E-04	0.1030E-04
0.3187E-01	0.1205E-01	0.9979	2.864	0.6748	0.8537E-05	0.8484E-05
0.3333E-01	0.1229E-01	0.9963	2.859	0.6764	0.8926E-05	0.8863E-05
0.3478E-01	0.1195E-01	0.9956	2.859	0.6783	0.8439E-05	0.8403E-05
0.3625E-01	0.1248E-01	0.9957	2.859	0.6799	0.9204E-05	0.9186E-05
0.3771E-01	0.1257E-01	0.9962	2.859	0.6797	0.9338E-05	0.9317E-05
0.3914E-01	0.1301E-01	0.9974	2.864	0.6794	0.9951E-05	0.9958E-05
0.4059E-01	0.1308E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08N08.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = 0.1016E-01)

```
X                  = 0.1020E-01
Z                  = -.1270E-01
M ref              =  2.870
U   ref hw         =  578.8
RHO ref hw         = 0.7868
TAU wall preston   =  125.8
P wall mean flow   = 0.3427E+05
```

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.8213					
0.1012E-02	0.1574					
0.2456E-02	0.1665					
0.3919E-02	0.1692	0.7518	1.623	0.9593	0.7544E-02	0.3469E-02
0.5369E-02	0.1678	0.7857	1.745	0.9406	0.6353E-02	0.3312E-02
0.6818E-02	0.1485	0.8179	1.863	0.9106	0.4281E-02	0.2464E-02
0.8274E-02	0.1225	0.8489	1.991	0.8052	0.2480E-02	0.1441E-02
0.9740E-02	0.1326	0.8834	2.147	0.7100	0.2392E-02	0.1425E-02
0.1118E-01	0.1333	0.9117	2.286	0.6718	0.2038E-02	0.1303E-02
0.1263E-01	0.1284	0.9260	2.365	0.6608	0.1721E-02	0.1157E-02
0.1409E-01	0.1254	0.9405	2.449	0.6561	0.1484E-02	0.1063E-02
0.1557E-01	0.1202	0.9529	2.527	0.6549	0.1245E-02	0.9475E-03
0.1701E-01	0.1153	0.9627	2.590	0.6560	0.1064E-02	0.8523E-03
0.1846E-01	0.1015	0.9725	2.654	0.6582	0.7658E-03	0.6465E-03
0.1992E-01	0.9114E-01	0.9804	2.707	0.6618	0.5816E-03	0.5135E-03
0.2137E-01	0.7406E-01	0.9853	2.738	0.6647	0.3709E-03	0.3364E-03
0.2284E-01	0.5871E-01	0.9892	2.783	0.6665	0.2217E-03	0.2083E-03
0.2429E-01	0.3768E-01	0.9898	2.803	0.6665	0.8930E-04	0.8510E-04
0.2572E-01	0.2965E-01	0.9936	2.828	0.6666	0.5374E-04	0.5217E-04
0.2715E-01	0.1629E-01	0.9951	2.839	0.6665	0.1603E-04	0.1568E-04
0.2862E-01	0.1399E-01	0.9954	2.847	0.6657	0.1172E-04	0.1151E-04
0.3007E-01	0.1204E-01	0.9954	2.851	0.6655	0.8643E-05	0.8510E-05
0.3154E-01	0.1097E-01	0.9951	2.851	0.6664	0.7175E-05	0.7075E-05
0.3299E-01	0.1083E-01	0.9949	2.851	0.6661	0.6993E-05	0.6892E-05
0.3446E-01	0.1123E-01	0.9948	2.851	0.6657	0.7519E-05	0.7406E-05

AGARDOGRAPH 315 DATA TAPE FILE: NEWCCO8N09.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = 0.1016E-01)

X = 0.1520E-01
Z = -.1270E-01
M ref = 2.870
U ref hw = 579.5
RHO ref hw = 0.7849
TAU wall preston = 136.0
P wall mean flow = 0.3496E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.1534					
0.1575E-02	0.1641					
0.3024E-02	0.1613	0.7188	1.515	0.9693	0.7857E-02	0.3246E-02
0.4487E-02	0.1613	0.7637	1.666	0.9541	0.6491E-02	0.3192E-02
0.5938E-02	0.1677	0.7993	1.794	0.9311	0.5965E-02	0.3318E-02
0.7385E-02	0.1613	0.8257	1.895	0.8840	0.4855E-02	0.2861E-02
0.8837E-02	0.1561	0.8634	2.054	0.7609	0.3720E-02	0.2218E-02
0.1029E-01	0.1266	0.8949	2.202	0.6887	0.2039E-02	0.1264E-02
0.1175E-01	0.1218	0.9207	2.335	0.6654	0.1605E-02	0.1081E-02
0.1321E-01	0.1278	0.9339	2.409	0.6584	0.1616E-02	0.1147E-02
0.1466E-01	0.1217	0.9453	2.479	0.6556	0.1349E-02	0.1010E-02
0.1613E-01	0.1169	0.9551	2.542	0.6553	0.1157E-02	0.9096E-03
0.1758E-01	0.1043	0.9671	2.619	0.6565	0.8420E-03	0.7042E-03
0.1905E-01	0.9145E-01	0.9755	2.675	0.6597	0.6074E-03	0.5323E-03
0.2051E-01	0.8101E-01	0.9835	2.727	0.6630	0.4495E-03	0.4114E-03
0.2196E-01	0.6012E-01	0.9859	2.749	0.6658	0.2414E-03	0.2255E-03
0.2343E-01	0.4431E-01	0.9896	2.793	0.6665	0.1248E-03	0.1205E-03
0.2489E-01	0.3465E-01	0.9917	2.816	0.6665	0.7439E-04	0.7302E-04
0.2633E-01	0.1999E-01	0.9944	2.834	0.6667	0.2429E-04	0.2414E-04
0.2776E-01	0.1560E-01	0.9953	2.843	0.6661	0.1464E-04	0.1463E-04
0.2923E-01	0.1331E-01	0.9955	2.849	0.6654	0.1058E-04	0.1061E-04
0.3069E-01	0.1164E-01	0.9953	2.851	0.6659	0.8078E-05	0.8119E-05
0.3215E-01	0.1219E-01	0.9950	2.851	0.6664	0.8859E-05	0.8911E-05
0.3360E-01	0.1126E-01	0.9948	2.851	0.6660	0.7559E-05	0.7599E-05
0.3506E-01	0.1144E-01	0.9949	2.851	0.6655	0.7803E-05	0.7838E-05
0.3654E-01	0.1074E-01	0.9953	2.852	0.6650	0.6871E-05	0.6901E-05

AGARDOGRAPH 315 DATA TAPE FILE: NEWCCO8N10.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = 0.2540E-01)

X = 0.2030E-01
Z = -.1270E-01
M ref = 2.870
U ref hw = 572.0
RHO ref hw = 0.8056
TAU wall preston = 145.2
P wall mean flow = 0.3565E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.9537E-01					
0.1010E-03	0.1656					
0.9959E-03	0.1755					
0.2224E-02	0.1633					
0.3420E-02	0.1663	0.7284	1.549	0.9677	0.8001E-02	0.3518E-02
0.4637E-02	0.1610	0.7607	1.659	0.9614	0.6520E-02	0.3269E-02
0.5865E-02	0.1584	0.7921	1.771	0.9494	0.5478E-02	0.3088E-02
0.7061E-02	0.1551	0.8126	1.852	0.9427	0.4739E-02	0.2901E-02
0.8269E-02	0.1563	0.8413	1.967	0.9383	0.4163E-02	0.2861E-02
0.9475E-02	0.1534	0.8591	2.037	0.9314	0.3673E-02	0.2687E-02
0.1069E-01	0.1447	0.8799	2.137	0.9276	0.2885E-02	0.2314E-02
0.1191E-01	0.1285	0.8987	2.227	0.9159	0.2035E-02	0.1751E-02
0.1312E-01	0.1086	0.9149	2.308	0.8974	0.1317E-02	0.1193E-02
0.1433E-01	0.1063	0.9261	2.367	0.8358	0.1176E-02	0.1043E-02
0.1555E-01	0.9605E-01	0.9491	2.497	0.7231	0.8228E-03	0.7026E-03
0.1678E-01	0.8486E-01	0.9668	2.608	0.6671	0.5644E-03	0.4851E-03
0.1798E-01	0.7461E-01	0.9789	2.700	0.6399	0.3929E-03	0.3471E-03
0.1920E-01	0.5970E-01	0.9860	2.754	0.6318	0.2366E-03	0.2148E-03
0.2041E-01	0.4321E-01	0.9914	2.791	0.6303	0.1190E-03	0.1106E-03
0.2164E-01	0.3425E-01	0.9937	2.819	0.6297	0.7248E-04	0.6866E-04
0.2285E-01	0.2701E-01	0.9938	2.830	0.6286	0.4454E-04	0.4245E-04
0.2407E-01	0.2050E-01	0.9962	2.856	0.6286	0.2490E-04	0.2419E-04
0.2528E-01	0.1450E-01	0.9966	2.866	0.6289	0.1233E-04	0.1206E-04
0.2649E-01	0.1585E-01	0.9970	2.866	0.6288	0.1473E-04	0.1441E-04
0.2767E-01	0.1089E-01	0.9981	2.869	0.6278	0.6929E-05	0.6782E-05
0.2888E-01	0.1038E-01	0.9985	2.873	0.6259	0.6270E-05	0.6135E-05
0.3011E-01	0.1059E-01					
0.3133E-01	0.9818E-02					
0.3255E-01	0.1054E-01					
0.3376E-01	0.9893E-02					
0.3498E-01	0.9600E-02					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCCO8N11.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = 0.2540E-01)

X = 0.2540E-01
Z = -.1270E-01
M ref = 2.870
U ref hw = 573.5
RHO ref hw = 0.8015
TAU wall preston = 154.3
P wall mean flow = 0.3565E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.4418E-02					
0.8733E-03	0.1261					
0.2305E-02	0.1463					
0.3769E-02	0.1585	0.7362	1.575	0.9656	0.7033E-02	0.3190E-02
0.5215E-02	0.1597	0.7738	1.705	0.9564	0.6054E-02	0.3187E-02
0.6655E-02	0.1652	0.8090	1.836	0.9432	0.5483E-02	0.3302E-02
0.8111E-02	0.1564	0.8378	1.953	0.9393	0.4241E-02	0.2877E-02
0.9576E-02	0.1575	0.8612	2.046	0.9312	0.3824E-02	0.2824E-02

0.1102E-01	0.1585	0.8856	2.165	0.9251	0.3345E-02	0.2745E-02
0.1247E-01	0.1544	0.9102	2.285	0.9088	0.2739E-02	0.2461E-02
0.1394E-01	0.1342	0.9198	2.334	0.8633	0.1951E-02	0.1737E-02
0.1540E-01	0.1158	0.9464	2.482	0.7333	0.1218E-02	0.1042E-02
0.1685E-01	0.1013	0.9679	2.615	0.6650	0.7976E-03	0.6871E-03
0.1832E-01	0.8682E-01	0.9811	2.719	0.6359	0.5208E-03	0.4636E-03
0.1978E-01	0.7415E-01	0.9890	2.774	0.6308	0.3572E-03	0.3283E-03
0.2124E-01	0.5685E-01	0.9932	2.811	0.6300	0.2015E-03	0.1899E-03
0.2269E-01	0.3682E-01	0.9937	2.828	0.6288	0.8289E-04	0.7894E-04
0.2415E-01	0.2860E-01	0.9962	2.857	0.6286	0.4843E-04	0.4707E-04
0.2558E-01	0.1835E-01	0.9967	2.866	0.6289	0.1975E-04	0.1932E-04
0.2703E-01	0.1524E-01	0.9975	2.866	0.6285	0.1362E-04	0.1332E-04
0.2849E-01	0.1280E-01	0.9986	2.873	0.6266	0.9535E-05	0.9339E-05
0.2994E-01	0.1116E-01					
0.3139E-01	0.1098E-01					
0.3285E-01	0.1072E-01					
0.3432E-01	0.1105E-01					
0.3578E-01	0.1077E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08M12.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = 0.2540E-01)

X = 0.3050E-01
Z = -.1270E-01
M ref = 2.870
U ref hw = 582.6
RHO ref hw = 0.7765
TAU wall preston = 159.9
P wall mean flow = 0.3623E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.8417E-01					
0.9569E-03	0.1592					
0.2179E-02	0.1696					
0.3385E-02	0.1732	0.7273	1.545	0.9679	0.8717E-02	0.3878E-02
0.4594E-02	0.1671	0.7595	1.655	0.9618	0.7060E-02	0.3580E-02
0.5827E-02	0.1649	0.7913	1.768	0.9497	0.5958E-02	0.3404E-02
0.7031E-02	0.1621	0.8124	1.851	0.9428	0.5184E-02	0.3221E-02
0.8228E-02	0.1545	0.8406	1.964	0.9385	0.4082E-02	0.2843E-02
0.9447E-02	0.1542	0.8587	2.035	0.9316	0.3719E-02	0.2761E-02
0.1066E-01	0.1443	0.8794	2.135	0.9278	0.2877E-02	0.2340E-02
0.1188E-01	0.1481	0.8983	2.225	0.9162	0.2710E-02	0.2366E-02
0.1310E-01	0.1395	0.9147	2.308	0.8978	0.2175E-02	0.2001E-02
0.1430E-01	0.1307	0.9256	2.364	0.8390	0.1784E-02	0.1610E-02
0.1552E-01	0.1241	0.9486	2.494	0.7249	0.1378E-02	0.1196E-02
0.1676E-01	0.9481E-01	0.9665	2.606	0.6677	0.7061E-03	0.6163E-03
0.1796E-01	0.7375E-01	0.9787	2.699	0.6402	0.3843E-03	0.3449E-03
0.1917E-01	0.5906E-01	0.9859	2.754	0.6319	0.2317E-03	0.2136E-03
0.2039E-01	0.4957E-01	0.9914	2.791	0.6303	0.1566E-03	0.1479E-03
0.2161E-01	0.3852E-01	0.9937	2.818	0.6297	0.9170E-04	0.8826E-04
0.2282E-01	0.2882E-01	0.9938	2.829	0.6287	0.5072E-04	0.4912E-04
0.2405E-01	0.1966E-01	0.9962	2.856	0.6286	0.2291E-04	0.2261E-04
0.2525E-01	0.1533E-01	0.9966	2.866	0.6289	0.1378E-04	0.1370E-04
0.2645E-01	0.1295E-01	0.9970	2.866	0.6289	0.9835E-05	0.9775E-05
0.2764E-01	0.1246E-01	0.9981	2.869	0.6279	0.9073E-05	0.9023E-05
0.2885E-01	0.1194E-01	0.9985	2.873	0.6260	0.8297E-05	0.8249E-05
0.3008E-01	0.1059E-01					
0.3129E-01	0.1050E-01					
0.3252E-01	0.1045E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08M13.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-8 DEG OFF VERTICAL. X = 0.4572E-01)

X = 0.3560E-01
Z = .1270E-01
M ref = 2.870
U ref hw = 570.8
RHO ref hw = 0.8088
TAU wall preston = 163.8
P wall mean flow = 0.3680E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.1254					
0.1550E-02	0.1715	0.6520	1.318	0.9933	0.1133E-01	0.3824E-02
0.3030E-02	0.1876	0.7018	1.467	0.9873	0.1129E-01	0.4687E-02
0.4480E-02	0.1898	0.7311	1.563	0.9876	0.1024E-01	0.4829E-02
0.5929E-02	0.1819	0.7656	1.680	0.9823	0.8103E-02	0.4394E-02
0.7379E-02	0.1762	0.7997	1.802	0.9757	0.6518E-02	0.4035E-02
0.8845E-02	0.1704	0.8235	1.892	0.9707	0.5437E-02	0.3693E-02
0.1030E-01	0.1639	0.8488	1.995	0.9686	0.4415E-02	0.3328E-02
0.1176E-01	0.1556	0.8674	2.080	0.9655	0.3580E-02	0.2923E-02
0.1323E-01	0.1436	0.8839	2.154	0.9634	0.2782E-02	0.2430E-02
0.1470E-01	0.1304	0.9020	2.241	0.9628	0.2062E-02	0.1948E-02
0.1615E-01	0.1171	0.9193	2.334	0.9621	0.1484E-02	0.1521E-02
0.1760E-01	0.1193	0.9307	2.400	0.9579	0.1424E-02	0.1536E-02
0.1906E-01	0.6655E-01	0.9452	2.490	0.9284	0.3985E-03	0.4483E-03
0.2051E-01	0.4304E-01	0.9631	2.613	0.7959	0.1445E-03	0.1534E-03
0.2197E-01	0.3065E-01	0.9812	2.738	0.6511	0.6354E-04	0.6061E-04
0.2342E-01	0.2121E-01					
0.2483E-01	0.1523E-01					
0.2627E-01	0.1341E-01					
0.2774E-01	0.1348E-01					
0.2920E-01	0.1285E-01					
0.3066E-01	0.1328E-01					
0.3211E-01	0.1276E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08M14.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-8 DEG OFF VERTICAL. X = 0.4572E-01)

X = 0.4570E-01
Z = -.1270E-01
M ref = 2.870
U ref hw = 571.1
RHO ref hw = 0.8082
TAU wall preston = 172.6
P wall mean flow = 0.3795E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.1978					
0.4100E-03	0.1735					
0.1851E-02	0.1959	0.6666	1.360	0.9911	0.1406E-01	0.5192E-02
0.3295E-02	0.2139	0.7084	1.488	0.9873	0.1429E-01	0.6298E-02
0.4749E-02	0.2081	0.7368	1.582	0.9868	0.1201E-01	0.5982E-02
0.6214E-02	0.1982	0.7722	1.704	0.9809	0.9341E-02	0.5361E-02
0.7670E-02	0.1846	0.8099	1.840	0.9745	0.6817E-02	0.4533E-02
0.9110E-02	0.1777	0.8284	1.911	0.9702	0.5770E-02	0.4122E-02
0.1058E-01	0.1667	0.8549	2.022	0.9679	0.4418E-02	0.3524E-02
0.1203E-01	0.1577	0.8710	2.096	0.9652	0.3604E-02	0.3081E-02
0.1348E-01	0.1509	0.8881	2.174	0.9630	0.2998E-02	0.2750E-02
0.1495E-01	0.1301	0.9053	2.258	0.9627	0.2009E-02	0.1988E-02
0.1641E-01	0.1107	0.9216	2.348	0.9616	0.1306E-02	0.1395E-02
0.1788E-01	0.8642E-01	0.9326	2.412	0.9558	0.7365E-03	0.8257E-03
0.1933E-01	0.7248E-01	0.9503	2.522	0.9119	0.4549E-03	0.5320E-03
0.2078E-01	0.1148	0.9663	2.635	0.7678	0.1001E-02	0.1076E-02
0.2220E-01	0.4815E-01	0.9868	2.778	0.6300	0.1499E-03	0.1469E-03
0.2365E-01	0.1605E-01					
0.2511E-01	0.1337E-01					
0.2657E-01	0.1229E-01					
0.2802E-01	0.1092E-01					
0.2947E-01	0.1134E-01					
0.3094E-01	0.1078E-01					
0.3239E-01	0.1085E-01					

0.3382E-01	0.1046E-01
0.3527E-01	0.1075E-01
0.3674E-01	0.1160E-01

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08M15.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-8 DEG OFF VERTICAL. X = 0.4572E-01)
X = 0.5590E-01
Z = -.1270E-01
M ref = 2.870
U ref hw = 573.9
RHO ref hw = 0.8002
TAU wall preston = 179.6
P wall mean flow = 0.3864E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.1377					
0.1410E-03	0.1349					
0.1584E-02	0.1717	0.6532	1.322	0.9930	0.1131E-01	0.4027E-02
0.3037E-02	0.1816	0.7020	1.467	0.9873	0.1057E-01	0.4612E-02
0.4500E-02	0.1922	0.7315	1.565	0.9875	0.1048E-01	0.5199E-02
0.5956E-02	0.1856	0.7661	1.683	0.9821	0.8412E-02	0.4801E-02
0.7412E-02	0.1887	0.8017	1.809	0.9755	0.7405E-02	0.4853E-02
0.8871E-02	0.1804	0.8239	1.894	0.9707	0.6079E-02	0.4344E-02
0.1035E-01	0.1689	0.8499	2.000	0.9685	0.4661E-02	0.3706E-02
0.1182E-01	0.1567	0.8682	2.083	0.9655	0.3615E-02	0.3109E-02
0.1327E-01	0.1453	0.8845	2.157	0.9633	0.2837E-02	0.2610E-02
0.1473E-01	0.1307	0.9024	2.243	0.9628	0.2067E-02	0.2054E-02
0.1619E-01	0.1107	0.9196	2.336	0.9620	0.1323E-02	0.1426E-02
0.1765E-01	0.8192E-01	0.9310	2.402	0.9577	0.6696E-03	0.7596E-03
0.1911E-01	0.6232E-01	0.9462	2.496	0.9255	0.3469E-03	0.4105E-03
0.2056E-01	0.4521E-01	0.9637	2.617	0.7908	0.1587E-03	0.1763E-03
0.2198E-01	0.2846E-01	0.9814	2.739	0.6502	0.5468E-04	0.5476E-04
0.2343E-01	0.8667E-01					
0.2490E-01	0.7790E-01					
0.2635E-01	0.1725E-01					
0.2782E-01	0.1111E-01					
0.2927E-01	0.1168E-01					
0.3074E-01	0.1182E-01					
0.3220E-01	0.1148E-01					
0.3366E-01	0.1121E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08M16.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-8 DEG OFF VERTICAL. X = 0.6604E-01)
X = 0.6600E-01
Z = -.1270E-01
M ref = 2.870
U ref hw = 575.4
RHO ref hw = 0.7962
TAU wall preston = 181.0
P wall mean flow = 0.3910E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.1532					
0.9680E-03	0.1528	0.6507	1.300	0.9635	0.9202E-02	0.3110E-02
0.2430E-02	0.1602	0.7011	1.447	0.9640	0.8434E-02	0.3537E-02
0.3874E-02	0.1756	0.7247	1.529	0.9657	0.9145E-02	0.4289E-02
0.5317E-02	0.1735	0.7598	1.642	0.9664	0.7745E-02	0.4189E-02
0.6773E-02	0.1769	0.7857	1.727	0.9636	0.7220E-02	0.4312E-02
0.8239E-02	0.1742	0.8099	1.819	0.9645	0.6229E-02	0.4131E-02
0.9697E-02	0.1684	0.8364	1.923	0.9658	0.5107E-02	0.3787E-02
0.1116E-01	0.1629	0.8570	2.010	0.9668	0.4284E-02	0.3474E-02
0.1262E-01	0.1469	0.8791	2.108	0.9671	0.3083E-02	0.2750E-02
0.1408E-01	0.1356	0.8962	2.191	0.9665	0.2369E-02	0.2283E-02
0.1553E-01	0.1210	0.9123	2.276	0.9660	0.1700E-02	0.1767E-02
0.1698E-01	0.1037	0.9268	2.351	0.9652	0.1140E-02	0.1264E-02
0.1843E-01	0.7229E-01	0.9385	2.415	0.9627	0.5136E-03	0.5989E-03
0.1989E-01	0.4578E-01	0.9440	2.459	0.9604	0.1956E-03	0.2358E-03
0.2136E-01	0.2931E-01	0.9477	2.491	0.9583	0.7717E-04	0.9531E-04
0.2282E-01	0.2025E-01	0.9515	2.514	0.9567	0.3585E-04	0.4503E-04
0.2424E-01	0.1827E-01	0.9535	2.530	0.9513	0.2865E-04	0.3623E-04
0.2567E-01	0.2034E-01	0.9585	2.570	0.9191	0.3390E-04	0.4274E-04
0.2715E-01	0.1025	0.9705	2.655	0.7831	0.7802E-03	0.8946E-03
0.2860E-01	0.4897E-01	1.003	2.893	0.5704	0.1365E-03	0.1354E-03
0.3006E-01	0.1144E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08M17.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-8 DEG OFF VERTICAL. X = 0.6604E-01)
X = 0.7620E-01
Z = -.1270E-01
M ref = 2.870
U ref hw = 571.5
RHO ref hw = 0.8068
TAU wall preston = 189.0
P wall mean flow = 0.3910E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.1000					
0.8785E-03	0.1559	0.6450	1.284	0.9631	0.9756E-02	0.3219E-02
0.2341E-02	0.1601	0.6994	1.442	0.9639	0.8484E-02	0.3530E-02
0.3810E-02	0.1674	0.7230	1.523	0.9656	0.8375E-02	0.3897E-02
0.5250E-02	0.1805	0.7588	1.639	0.9665	0.8415E-02	0.4535E-02
0.6697E-02	0.1814	0.7845	1.723	0.9638	0.7634E-02	0.4537E-02
0.8166E-02	0.1871	0.8087	1.814	0.9645	0.7232E-02	0.4769E-02
0.9627E-02	0.1729	0.8353	1.919	0.9657	0.5411E-02	0.3996E-02
0.1107E-01	0.1713	0.8561	2.006	0.9668	0.4760E-02	0.3845E-02
0.1253E-01	0.1599	0.8787	2.106	0.9671	0.3662E-02	0.3261E-02
0.1399E-01	0.1492	0.8954	2.187	0.9665	0.2884E-02	0.2768E-02
0.1545E-01	0.1343	0.9119	2.274	0.9660	0.2100E-02	0.2179E-02
0.1691E-01	0.1137	0.9258	2.346	0.9653	0.1379E-02	0.1522E-02
0.1836E-01	0.9240E-01	0.9378	2.411	0.9628	0.8430E-03	0.9799E-03
0.1977E-01	0.6686E-01	0.9434	2.454	0.9606	0.4194E-03	0.5040E-03
0.2122E-01	0.3842E-01	0.9475	2.489	0.9585	0.1329E-03	0.1639E-03
0.2269E-01	0.2950E-01	0.9511	2.512	0.9569	0.7628E-04	0.9565E-04
0.2415E-01	0.1866E-01	0.9534	2.529	0.9517	0.2993E-04	0.3783E-04
0.2561E-01	0.1866E-01	0.9582	2.568	0.9212	0.2861E-04	0.3608E-04
0.2706E-01	0.1804E-01	0.9708	2.657	0.7939	0.2413E-04	0.2808E-04
0.2853E-01	0.2026E-01	1.001	2.876	0.5785	0.2381E-04	0.2366E-04
0.2999E-01	0.2594E-01					
0.3142E-01	0.1106					
0.3287E-01	0.1744E-01					
0.3433E-01	0.1281E-01					
0.3578E-01	0.1346E-01					
0.3726E-01	0.1214E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08M18.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-8 DEG OFF VERTICAL. X = 0.6604E-01)
X = 0.8640E-01
Z = -.1270E-01
M ref = 2.870
U ref hw = 576.6
RHO ref hw = 0.7927
TAU wall preston = 191.4
P wall mean flow = 0.3933E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.9619E-01					
0.1465E-02	0.1646	0.6731	1.362	0.9638	0.9894E-02	0.3696E-02
0.2906E-02	0.1683	0.7109	1.479	0.9645	0.8945E-02	0.3944E-02
0.4364E-02	0.1808	0.7392	1.578	0.9663	0.9113E-02	0.4583E-02
0.5826E-02	0.1902	0.7694	1.671	0.9655	0.8961E-02	0.5050E-02
0.7277E-02	0.1897	0.7939	1.758	0.9639	0.7989E-02	0.4970E-02
0.8734E-02	0.1849	0.8200	1.858	0.9650	0.6681E-02	0.4650E-02
0.1019E-01	0.1777	0.8441	1.955	0.9662	0.5459E-02	0.4212E-02
0.1166E-01	0.1720	0.8642	2.041	0.9669	0.4591E-02	0.3864E-02
0.1311E-01	0.1609	0.8818	2.120	0.9670	0.3642E-02	0.3307E-02
0.1456E-01	0.1452	0.9010	2.216	0.9662	0.2634E-02	0.2612E-02
0.1601E-01	0.1279	0.9151	2.291	0.9660	0.1867E-02	0.1977E-02
0.1746E-01	0.1064	0.9308	2.372	0.9644	0.1171E-02	0.1328E-02
0.1893E-01	0.7954E-01	0.9419	2.437	0.9618	0.6058E-03	0.7229E-03
0.2039E-01	0.5363E-01	0.9467	2.479	0.9597	0.2621E-03	0.3229E-03
0.2182E-01	0.4043E-01	0.9488	2.498	0.9578	0.1456E-03	0.1819E-03
0.2324E-01	0.2251E-01	0.9524	2.520	0.9558	0.4399E-04	0.5579E-04
0.2472E-01	0.1669E-01	0.9542	2.537	0.9490	0.2371E-04	0.3026E-04
0.2617E-01	0.1505E-01	0.9627	2.600	0.8885	0.1793E-04	0.2249E-04
0.2763E-01	0.1405E-01	0.9736	2.679	0.7027	0.1427E-04	0.1503E-04
0.2908E-01	0.1493E-01					
0.3054E-01	0.1620E-01					
0.3201E-01	0.1878E-01					
0.3347E-01	0.8689E-01					
0.3490E-01	0.4780E-01					
0.3636E-01	0.1062E-01					
0.3781E-01	0.1129E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCCOBN19.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-8 DEG OFF VERTICAL. X = 0.6604E-01)

X = 0.9650E-01
Z = -.1270E-01
M ref = 2.870
U ref hw = 569.2
RHO ref hw = 0.8134
TAU wall preston = 199.6
P wall mean flow = 0.3956E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.1144					
0.9463E-03	0.1707	0.6493	1.296	0.9634	0.1154E-01	0.3922E-02
0.2381E-02	0.1674	0.7001	1.444	0.9639	0.9247E-02	0.3906E-02
0.3844E-02	0.1796	0.7239	1.526	0.9656	0.9600E-02	0.4539E-02
0.5318E-02	0.1887	0.7598	1.642	0.9664	0.9161E-02	0.5014E-02
0.6775E-02	0.1926	0.7857	1.728	0.9636	0.8557E-02	0.5171E-02
0.8209E-02	0.1940	0.8094	1.817	0.9645	0.7747E-02	0.5185E-02
0.9682E-02	0.1844	0.8361	1.922	0.9658	0.6130E-02	0.4595E-02
0.1114E-01	0.1807	0.8568	2.009	0.9668	0.5276E-02	0.4326E-02
0.1258E-01	0.1714	0.8789	2.107	0.9671	0.4202E-02	0.3789E-02
0.1405E-01	0.1576	0.8960	2.190	0.9665	0.3206E-02	0.3122E-02
0.1550E-01	0.1410	0.9122	2.275	0.9660	0.2311E-02	0.2429E-02
0.1697E-01	0.1190	0.9266	2.351	0.9652	0.1503E-02	0.1684E-02
0.1842E-01	0.9377E-01	0.9384	2.415	0.9627	0.8646E-03	0.1020E-02
0.1986E-01	0.6295E-01	0.9439	2.458	0.9604	0.3703E-03	0.4513E-03
0.2128E-01	0.4370E-01	0.9475	2.490	0.9584	0.1718E-03	0.2145E-03
0.2273E-01	0.2750E-01	0.9512	2.513	0.9568	0.6624E-04	0.8408E-04
0.2421E-01	0.1952E-01	0.9535	2.530	0.9515	0.3272E-04	0.4186E-04
0.2566E-01	0.1491E-01	0.9585	2.569	0.9194	0.1822E-04	0.2324E-04
0.2711E-01	0.1482E-01	0.9706	2.656	0.7879	0.1630E-04	0.1903E-04
0.2856E-01	0.1460E-01	1.002	2.883	0.5750	0.1227E-04	0.1232E-04
0.3003E-01	0.1467E-01					
0.3150E-01	0.1467E-01					
0.3293E-01	0.1466E-01					
0.3438E-01	0.1580E-01					
0.3585E-01	0.1894E-01					
0.3729E-01	0.1236					
0.3874E-01	0.1669E-01					
0.4020E-01	0.1189E-01					
0.4163E-01	0.1165E-01					
0.4309E-01	0.1480E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCCOBN20.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-8 DEG OFF VERTICAL. X = 0.1372)

X = 0.1067
Z = -.1270E-01
M ref = 2.870
U ref hw = 565.1
RHO ref hw = 0.8253
TAU wall preston = 198.0
P wall mean flow = 0.3979E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.1180					
0.8012E-03	0.1975	0.6636	1.347	1.003	0.1451E-01	0.5583E-02
0.2289E-02	0.1894	0.7229	1.523	0.9943	0.1073E-01	0.5227E-02
0.3741E-02	0.1897	0.7461	1.602	0.9942	0.9734E-02	0.5250E-02
0.5175E-02	0.1821	0.7681	1.674	0.9898	0.8192E-02	0.4800E-02
0.6635E-02	0.1971	0.7865	1.744	0.9824	0.8773E-02	0.5542E-02
0.8106E-02	0.1949	0.8078	1.824	0.9780	0.7751E-02	0.5331E-02
0.9564E-02	0.1807	0.8316	1.914	0.9771	0.5943E-02	0.4498E-02
0.1101E-01	0.1765	0.8520	2.000	0.9759	0.5092E-02	0.4200E-02
0.1247E-01	0.1659	0.8645	2.058	0.9765	0.4184E-02	0.3656E-02
0.1392E-01	0.1543	0.8855	2.151	0.9769	0.3222E-02	0.3079E-02
0.1536E-01	0.1297	0.9032	2.235	0.9764	0.2055E-02	0.2118E-02
0.1682E-01	0.1114	0.9164	2.302	0.9758	0.1398E-02	0.1527E-02
0.1827E-01	0.9433E-01	0.9256	2.354	0.9763	0.9405E-03	0.1075E-02
0.1969E-01	0.6860E-01	0.9323	2.394	0.9809	0.4742E-03	0.5634E-03
0.2113E-01	0.4481E-01	0.9369	2.423	0.9854	0.1954E-03	0.2390E-03
0.2260E-01	0.2792E-01	0.9398	2.446	0.9892	0.7386E-04	0.9238E-04
0.2406E-01	0.1783E-01	0.9432	2.471	0.9890	0.2925E-04	0.3732E-04
0.2552E-01	0.1413E-01	0.9456	2.488	0.9870	0.1800E-04	0.2324E-04
0.2697E-01	0.1383E-01	0.9442	2.484	0.9821	0.1733E-04	0.2219E-04
0.2844E-01	0.1264E-01	0.9461	2.500	0.9756	0.1419E-04	0.1830E-04
0.2990E-01	0.1312E-01	0.9461	2.500	0.9719	0.1530E-04	0.1965E-04
0.3136E-01	0.1284E-01					
0.3280E-01	0.1308E-01					
0.3426E-01	0.1455E-01					
0.3571E-01	0.1433E-01					
0.3716E-01	0.1509E-01					
0.3861E-01	0.1512E-01					
0.4006E-01	0.6353E-01					
0.4151E-01	0.2985E-01					
0.4297E-01	0.1149E-01					
0.4444E-01	0.1283E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCCOBN21.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-8 DEG OFF VERTICAL. X = 0.1372)

X = 0.1168
Z = -.1270E-01
M ref = 2.870
U ref hw = 578.0
RHO ref hw = 0.7890
TAU wall preston = 202.2
P wall mean flow = 0.3991E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.1612					
0.1577E-02	0.1576	0.7065	1.471	0.9971	0.7922E-02	0.3624E-02
0.3027E-02	0.1661	0.7356	1.569	0.9952	0.7787E-02	0.4041E-02
0.4467E-02	0.1741	0.7578	1.637	0.9923	0.7840E-02	0.4421E-02
0.5935E-02	0.1806	0.7779	1.712	0.9861	0.7677E-02	0.4702E-02
0.7404E-02	0.1838	0.8008	1.798	0.9784	0.7127E-02	0.4777E-02
0.8854E-02	0.1854	0.8190	1.866	0.9779	0.6651E-02	0.4800E-02
0.1031E-01	0.1777	0.8428	1.960	0.9763	0.5424E-02	0.4313E-02
0.1177E-01	0.1663	0.8613	2.042	0.9762	0.4289E-02	0.3700E-02
0.1323E-01	0.1558	0.8725	2.092	0.9769	0.3534E-02	0.3204E-02
0.1469E-01	0.1470	0.8978	2.208	0.9767	0.2728E-02	0.2753E-02
0.1615E-01	0.1242	0.9111	2.274	0.9761	0.1796E-02	0.1922E-02
0.1757E-01	0.1004	0.9206	2.325	0.9755	0.1103E-02	0.1233E-02
0.1902E-01	0.8377E-01	0.9252	2.354	0.9782	0.7414E-03	0.8522E-03
0.2049E-01	0.5332E-01	0.9348	2.409	0.9835	0.2813E-03	0.3404E-03
0.2195E-01	0.3602E-01	0.9395	2.441	0.9879	0.1236E-03	0.1543E-03
0.2341E-01	0.2407E-01	0.9420	2.462	0.9894	0.5386E-04	0.6846E-04
0.2486E-01	0.1514E-01	0.9446	2.481	0.9881	0.2084E-04	0.2687E-04
0.2634E-01	0.1292E-01	0.9450	2.487	0.9844	0.1507E-04	0.1944E-04
0.2780E-01	0.1287E-01	0.9451	2.492	0.9785	0.1486E-04	0.1914E-04
0.2924E-01	0.1235E-01	0.9464	2.503	0.9732	0.1351E-04	0.1746E-04
0.3069E-01	0.1183E-01					
0.3215E-01	0.1176E-01					
0.3361E-01	0.1187E-01					
0.3506E-01	0.1254E-01					
0.3652E-01	0.1311E-01					
0.3796E-01	0.1385E-01					
0.3942E-01	0.1492E-01					
0.4089E-01	0.1551E-01					
0.4235E-01	0.2104E-01					
0.4380E-01	0.7220E-01					
0.4527E-01	0.1154E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08N22.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-8 DEG OFF VERTICAL. X = 0.1372)

```
X                    = 0.1270
Z                    = -.1270E-01
M ref                =  2.870
U   ref hw           =  570.3
RHO ref hw           = 0.8104
TAU wall preston     =  202.2
P wall mean flow     = 0.4002E+05
```

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.2085					
0.3300E-03	0.1548					
0.1790E-02	0.1544	0.7137	1.493	0.9956	0.7402E-02	0.3491E-02
0.3250E-02	0.1595	0.7374	1.576	0.9953	0.7117E-02	0.3738E-02
0.4720E-02	0.1697	0.7617	1.650	0.9915	0.7327E-02	0.4206E-02
0.6180E-02	0.1732	0.7809	1.723	0.9848	0.6958E-02	0.4326E-02
0.7610E-02	0.1726	0.8029	1.806	0.9783	0.6223E-02	0.4219E-02
0.9020E-02	0.1807	0.8218	1.877	0.9779	0.6234E-02	0.4564E-02
0.1049E-01	0.1820	0.8450	1.970	0.9762	0.5622E-02	0.4526E-02
0.1194E-01	0.1742	0.8621	2.046	0.9763	0.4684E-02	0.4067E-02
0.1341E-01	0.1677	0.8744	2.101	0.9770	0.4053E-02	0.3714E-02
0.1486E-01	0.1522	0.8995	2.216	0.9767	0.2894E-02	0.2952E-02
0.1632E-01	0.1365	0.9131	2.285	0.9761	0.2142E-02	0.2320E-02
0.1778E-01	0.1165	0.9231	2.339	0.9756	0.1461E-02	0.1657E-02
0.1924E-01	0.9191E-01	0.9275	2.367	0.9791	0.8787E-03	0.1025E-02
0.2067E-01	0.6937E-01	0.9349	2.411	0.9841	0.4753E-03	0.5779E-03
0.2212E-01	0.4709E-01	0.9394	2.441	0.9885	0.2113E-03	0.2646E-03
0.2358E-01	0.2944E-01	0.9423	2.464	0.9893	0.8036E-04	0.1026E-03
0.2503E-01	0.1710E-01	0.9448	2.482	0.9878	0.2653E-04	0.3434E-04
0.2647E-01	0.1615E-01	0.9449	2.486	0.9839	0.2356E-04	0.3046E-04
0.2792E-01	0.1300E-01	0.9453	2.494	0.9780	0.1514E-04	0.1957E-04
0.2935E-01	0.1222E-01	0.9464	2.502	0.9730	0.1324E-04	0.1714E-04
0.3082E-01	0.1263E-01					
0.3230E-01	0.1257E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC08N23.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-8 DEG OFF VERTICAL. X = 0.1372)

```
X                    = 0.1524
Z                    = -.1270E-01
M ref                =  2.870
U   ref hw           =  571.3
RHO ref hw           = 0.8074
TAU wall preston     =  207.5
P wall mean flow     = 0.4048E+05
```

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1000E-03	0.1519					
0.1300E-02	0.1605	0.6922	1.429	0.9995	0.8659E-02	0.3801E-02
0.2760E-02	0.1616	0.7345	1.563	0.9949	0.7425E-02	0.3879E-02
0.4210E-02	0.1829	0.7535	1.624	0.9931	0.8799E-02	0.4956E-02
0.5640E-02	0.1833	0.7741	1.697	0.9875	0.8058E-02	0.4927E-02
0.7070E-02	0.1838	0.7944	1.774	0.9801	0.7347E-02	0.4872E-02
0.8540E-02	0.1852	0.8137	1.846	0.9779	0.6805E-02	0.4877E-02
0.1000E-01	0.1845	0.8389	1.943	0.9765	0.5972E-02	0.4736E-02
0.1146E-01	0.1812	0.8588	2.030	0.9761	0.5169E-02	0.4469E-02
0.1290E-01	0.1702	0.8690	2.077	0.9767	0.4298E-02	0.3895E-02
0.1437E-01	0.1632	0.8937	2.189	0.9768	0.3440E-02	0.3463E-02
0.1583E-01	0.1454	0.9070	2.254	0.9761	0.2523E-02	0.2690E-02
0.1728E-01	0.1266	0.9172	2.306	0.9753	0.1795E-02	0.2002E-02
0.1872E-01	0.9252E-01	0.9246	2.351	0.9773	0.9086E-03	0.1055E-02
0.2017E-01	0.7514E-01	0.9345	2.407	0.9825	0.5601E-03	0.6856E-03
0.2163E-01	0.5073E-01	0.9398	2.441	0.9869	0.2452E-03	0.3101E-03
0.2307E-01	0.3396E-01	0.9411	2.455	0.9893	0.1081E-03	0.1386E-03
0.2451E-01	0.2264E-01	0.9440	2.477	0.9887	0.4683E-04	0.6107E-04
0.2595E-01	0.1345E-01	0.9456	2.489	0.9858	0.1629E-04	0.2139E-04
0.2740E-01	0.1301E-01	0.9444	2.487	0.9803	0.1528E-04	0.1992E-04
0.2886E-01	0.1235E-01	0.9467	2.505	0.9739	0.1348E-04	0.1771E-04
0.3033E-01	0.1264E-01	0.9458	2.498	0.9711	0.1424E-04	0.1855E-04
0.3177E-01	0.1315E-01					
0.3324E-01	0.1265E-01					
0.3469E-01	0.1244E-01					
0.3614E-01	0.1191E-01					

********************ALPHA=16 DEGREES, INCLINED-WIRE SURVEYS********************

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16101.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS VERTICAL
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = -.3810E-01)

```
X                    = -.5080E-01
Z                    = -.1270E-01
M ref                =  2.850
U   ref hw           =  569.9
RHO ref hw           = 0.8249
TAU wall preston     =  133.8
P wall mean flow     = 0.2663E+05
```

Y	(rhou)"v" RHO U**2	U Uref	M	Ps Pwall	(u"v") U**2	RHO(u"v") RHOref Uref**2
0.2000E-02	-.1469E-02	0.7804	1.675	1.084	-.6922E-03	-.2930E-03
0.3303E-02	-.2336E-02	0.8068	1.771	1.102	-.1036E-02	-.4985E-03
0.4734E-02	-.2322E-02	0.8386	1.890	1.083	-.9559E-03	.5149E-03
0.6177E-02	-.2357E-02	0.8648	2.000	1.075	.9067E-03	-.5421E-03
0.7621E-02	-.2464E-02	0.8812	2.069	1.074	-.9084E-03	.5812E-03
0.9047E-02	.2260E-02	0.8970	2.144	1.072	-.7960E-03	.5457E-03

0.1050E-01	-.2015E-02	0.9130	2.219	1.072	-.6785E-03	-.4981E-03
0.1193E-01	-.2197E-02	0.9267	2.290	1.068	-.7094E-03	-.5529E-03
0.1338E-01	-.1803E-02	0.9481	2.400	1.066	-.5458E-03	-.4664E-03
0.1484E-01	-.1713E-02	0.9588	2.467	1.063	-.4988E-03	-.4490E-03
0.1628E-01	-.1308E-02	0.9715	2.536	1.061	-.3659E-03	-.3474E-03
0.1771E-01	-.8849E-03	0.9807	2.600	1.059	-.2390E-03	-.2379E-03
0.1915E-01	-.8535E-03	0.9870	2.649	1.062	-.2242E-03	-.2325E-03
0.2062E-01	-.6056E-03	0.9937	2.701	1.057	-.1546E-03	-.1658E-03
0.2208E-01	-.2859E-03	0.9994	2.750	1.056	-.7103E-04	-.7892E-04
0.2354E-01	-.3834E-03	1.005	2.787	1.059	-.9336E-04	-.1069E-03
0.2500E-01	-.1368E-03	1.004	2.802	1.059	-.3303E-04	-.3821E-04
0.2649E-01	-.1888E-03	1.005	2.809	1.061	-.4542E-04	-.5291E-04
0.2795E-01	-.1116E-03	1.007	2.830	1.065	-.2654E-04	-.3149E-04
0.2941E-01	-.8257E-04	1.006	2.830	1.071	-.1964E-04	-.2344E-04
0.3080E-01	-.2271E-04	1.006	2.831	1.076	-.5400E-05	-.6476E-05
0.3212E-01	-.2889E-05	1.007	2.838	1.070	-.6843E-06	-.8209E-06
0.3359E-01	0.7791E-05					
0.3499E-01	0.7177E-05					
0.3639E-01	0.5385E-05					
0.3779E-01	0.6475E-05					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16102.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL. X = 0.1905E-01)

X = 0.1270E-01
Z = -.1270E-01
M ref = 2.850
U ref hw = 570.4
RHO ref hw = 0.8233
TAU wall preston = 106.9
P wall mean flow = 0.5180E+05

Y	(rhou)'v' / RHO U**2	U / Uref	M	Ps / Pwall	(u'v') / U**2	RHO(u'v') / RHOref Uref**2
0.2000E-02	-.6373E-02	0.5606	1.061	1.006	-.4395E-02	-.1346E-02
0.3321E-02	-.6183E-02	0.6220	1.214	0.9894	-.3890E-02	-.1535E-02
0.4758E-02	-.4775E-02	0.6807	1.373	0.9823	-.2722E-02	-.1365E-02
0.6211E-02	-.4901E-02	0.7241	1.499	0.9750	-.2581E-02	-.1531E-02
0.7653E-02	-.5992E-02	0.7645	1.626	0.9699	-.2912E-02	-.2022E-02
0.9102E-02	-.3032E-02	0.7927	1.721	0.9660	-.1388E-02	-.1075E-02
0.1056E-01	0.4412E-02	0.8400	1.900	0.9002	0.1805E-02	0.1588E-02
0.1199E-01	-.1052E-02	0.8906	2.113	0.7225	-.3778E-03	-.3299E-03
0.1342E-01	-.2814E-02	0.9390	2.357	0.5294	-.8736E-03	-.6952E-03
0.1486E-01	-.2457E-02	0.9677	2.537	0.4528	-.6872E-03	-.5422E-03
0.1633E-01	-.2164E-02	0.9827	2.638	0.4302	-.5721E-03	-.4635E-03
0.1779E-01	-.1793E-02	0.9915	2.702	0.4250	-.4575E-03	-.3841E-03
0.1925E-01	-.1349E-02	0.9971	2.743	0.4236	-.3364E-03	-.2903E-03
0.2070E-01	-.1019E-02	1.003	2.791	0.4236	-.2476E-03	-.2211E-03
0.2219E-01	-.8060E-03	1.002	2.799	0.4236	-.1950E-03	-.1752E-03
0.2364E-01	-.4942E-03	1.004	2.814	0.4236	-.1186E-03	-.1077E-03
0.2510E-01	-.3096E-03	1.005	2.827	0.4236	-.7377E-04	-.6761E-04
0.2642E-01	-.1548E-03	1.004	2.830	0.4236	-.3684E-04	-.3383E-04
0.2782E-01	-.7216E-04	1.006	2.836	0.4236	-.1711E-04	-.1578E-04
0.2921E-01	-.6382E-04	1.005	2.832	0.4236	-.1517E-04	-.1395E-04
0.3054E-01	-.3762E-04	1.005	2.834	0.4236	-.8933E-05	-.8224E-05
0.3186E-01	-.3165E-04	1.005	2.837	0.4236	-.7500E-05	-.6922E-05
0.3312E-01	-.2828E-04	1.005	2.837	0.4236	-.6702E-05	-.6185E-05
0.3436E-01	-.2894E-04					
0.3571E-01	-.2907E-04					
0.3705E-01	-.2611E-04					
0.3831E-01	-.2279E-04					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16103.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL. X = 0.1905E-01)

X = 0.2540E-01
Z = -.1270E-01
M ref = 2.850
U ref hw = 581.7
RHO ref hw = 0.7918
TAU wall preston = 147.3
P wall mean flow = 0.5669E+05

Y	(rhou)'v' / RHO U**2	U / Uref	M	Ps / Pwall	(u'v') / U**2	RHO(u'v') / RHOref Uref**2
0.2000E-02	-.4874E-02	0.5606	1.061	1.006	-.3362E-02	-.1127E-02
0.3377E-02	-.5368E-02	0.6241	1.220	0.9889	-.3366E-02	-.1466E-02
0.4828E-02	-.5550E-02	0.6830	1.379	0.9818	-.3151E-02	-.1744E-02
0.6271E-02	-.6030E-02	0.7269	1.508	0.9747	-.3159E-02	-.2073E-02
0.7717E-02	-.5898E-02	0.7665	1.633	0.9691	-.2854E-02	-.2185E-02
0.9168E-02	-.5806E-02	0.7947	1.728	0.9649	-.2646E-02	-.2258E-02
0.1061E-01	-.5968E-02	0.8419	1.908	0.8953	-.2430E-02	-.2346E-02
0.1207E-01	-.4702E-02	0.8936	2.126	0.7085	-.1674E-02	-.1589E-02
0.1354E-01	0.4989E-02	0.9430	2.378	0.5176	0.1530E-02	0.1326E-02
0.1497E-01	0.7396E-02	0.9692	2.548	0.4500	0.2057E-02	0.1780E-02
0.1639E-01	-.1166E-02	0.9830	2.640	0.4301	-.3079E-03	-.2733E-03
0.1784E-01	-.1175E-02	0.9918	2.704	0.4248	-.2994E-03	-.2755E-03
0.1933E-01	-.8307E-03	0.9977	2.747	0.4236	-.2067E-03	-.1958E-03
0.2080E-01	-.4379E-03	1.003	2.792	0.4236	-.1063E-03	-.1040E-03
0.2226E-01	-.2695E-03	1.002	2.800	0.4236	-.6515E-04	-.6411E-04
0.2372E-01	-.1625E-03	1.004	2.815	0.4236	-.3899E-04	-.3876E-04
0.2521E-01	-.1055E-03	1.005	2.828	0.4236	-.2512E-04	-.2522E-04
0.2668E-01	-.5747E-04	1.004	2.830	0.4236	-.1367E-04	-.1374E-04
0.2812E-01	-.3005E-04	1.006	2.837	0.4236	-.7122E-05	-.7192E-05
0.2960E-01	-.2641E-04	1.005	2.830	0.4236	-.6283E-05	-.6315E-05
0.3108E-01	-.1742E-04	1.005	2.836	0.4236	-.4131E-05	-.4168E-05
0.3256E-01	-.2400E-04	1.005	2.837	0.4236	-.5688E-05	-.5744E-05
0.3404E-01	-.1574E-04					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16104.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL. X = 0.3810E-01)

X = 0.5080E-01
Z = -.1270E-01
M ref = 2.850
U ref hw = 575.5
RHO ref hw = 0.8090
TAU wall preston = 197.3
P wall mean flow = 0.6221E+05

Y	(rhou)'v' / RHO U**2	U / Uref	M	Ps / Pwall	(u'v') / U**2	RHO(u'v') / RHOref Uref**2
0.2000E-02	-.3088E-02	0.5872	1.123	0.9810	-.2053E-02	-.8250E-03
0.3274E-02	-.3601E-02	0.6225	1.215	0.9690	-.2264E-02	-.1052E-02
0.4720E-02	-.4576E-02	0.6619	1.320	0.9631	-.2696E-02	-.1472E-02
0.6146E-02	-.5759E-02	0.6989	1.424	0.9577	-.3180E-02	-.2007E-02
0.7587E-02	-.6036E-02	0.7387	1.545	0.9564	-.3088E-02	-.2292E-02
0.9025E-02	-.6518E-02	0.7728	1.655	0.9540	-.3111E-02	-.2641E-02
0.1047E-01	-.6458E-02	0.8030	1.759	0.9563	-.2886E-02	-.2776E-02
0.1194E-01	-.6475E-02	0.8309	1.866	0.9533	-.2705E-02	-.2921E-02
0.1338E-01	-.5353E-02	0.8568	1.970	0.9466	-.2097E-02	-.2505E-02
0.1481E-01	-.3478E-02	0.8770	2.058	0.9464	-.1291E-02	-.1682E-02
0.1623E-01	-.2063E-02	0.8994	2.166	0.9093	-.7174E-03	-.9948E-03
0.1770E-01	-.1189E-02	0.9468	2.417	0.7111	-.3563E-03	-.4812E-03
0.1916E-01	-.3589E-03	0.9549	2.477	0.5166	-.1039E-03	-.1071E-03
0.2063E-01	0.3645E-02	0.9771	2.637	0.4315	0.9641E-03	0.9401E-03
0.2207E-01	0.8900E-02	0.9948	2.756	0.3944	0.2204E-02	0.2146E-02
0.2349E-01	0.1037E-03	1.002	2.808	0.3835	0.2496E-04	0.2453E-04
0.2489E-01	-.3100E-04	1.004	2.830	0.3788	-.7374E-05	-.7272E-05
0.2629E-01	-.3588E-04	1.004	2.826	0.3785	-.8555E-05	-.8406E-05

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AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16105.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL. X = 0.7620E-01)

X = 0.7620E-01
Z = -.1270E-01
M ref = 2.850
U ref hw = 581.4
RHO ref hw = 0.7926
TAU wall preston = 234.6
P wall mean flow = 0.6280E+05

Y	(rhou)"v" RHO U**2	U Uref	M	Ps Pwall	(u"v") U**2	RHO(u"v") RHOref Uref**2
0.2000E-02	-.2144E-02	0.6366	1.252	1.000	-.1317E-02	-.6782E-03
0.3418E-02	-.2946E-02	0.6678	1.337	0.9825	-.1718E-02	-.9904E-03
0.4845E-02	-.3093E-02	0.6954	1.418	0.9719	-.1714E-02	-.1100E-02
0.6280E-02	-.4558E-02	0.7196	1.490	0.9653	-.2414E-02	-.1697E-02
0.7710E-02	-.4838E-02	0.7527	1.594	0.9636	-.2399E-02	-.1928E-02
0.9140E-02	-.5486E-02	0.7869	1.709	0.9602	-.2531E-02	-.2328E-02
0.1060E-01	-.6327E-02	0.8132	1.803	0.9634	-.2751E-02	-.2826E-02
0.1202E-01	-.6090E-02	0.8444	1.916	0.9642	-.2467E-02	-.2866E-02
0.1347E-01	-.5034E-02	0.8630	1.999	0.9679	-.1937E-02	-.2459E-02
0.1492E-01	-.4564E-02	0.8764	2.056	0.9721	-.1696E-02	-.2288E-02
0.1635E-01	-.3411E-02	0.8901	2.125	0.9767	-.1216E-02	-.1759E-02
0.1782E-01	-.1737E-02	0.8951	2.156	0.9789	-.6076E-03	-.9074E-03
0.1926E-01	-.9792E-03	0.8979	2.175	0.9785	-.3385E-03	-.5144E-03
0.2070E-01	-.3785E-03	0.8993	2.185	0.9802	-.1301E-03	-.1998E-03
0.2211E-01	-.6090E-04	0.8987	2.184	0.9797	-.2094E-04	-.3212E-04
0.2357E-01	0.3463E-04	0.8996	2.191	0.9785	0.1186E-04	0.1828E-04
0.2504E-01	0.8353E-04	0.9001	2.191	0.9767	0.2861E-04	0.4401E-04
0.2651E-01	0.1023E-03	0.9017	2.200	0.9748	0.3484E-04	0.5395E-04
0.2795E-01	0.5311E-03	0.9085	2.238	0.9395	0.1768E-03	0.2731E-03
0.2942E-01	0.4862E-02	0.9198	2.300	0.7172	0.1560E-02	0.1943E-02

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16106.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL. X = 0.7620E-01)

X = 0.1016
Z = -.1270E-01
M ref = 2.850
U ref hw = 577.9
RHO ref hw = 0.8023
TAU wall preston = 257.4
P wall mean flow = 0.5925E+05

Y	(rhou)"v" RHO U**2	U Uref	M	Ps Pwall	(u"v") U**2	RHO(u"v") RHOref Uref**2
0.2000E-02	-.2293E-02	0.6366	1.252	1.000	-.1409E-02	-.6844E-03
0.3461E-02	-.2559E-02	0.6692	1.341	0.9820	-.1488E-02	-.8137E-03
0.4904E-02	-.4583E-02	0.6974	1.424	0.9714	-.2530E-02	-.1543E-02
0.6348E-02	-.4375E-02	0.7213	1.495	0.9652	-.2310E-02	-.1543E-02
0.7802E-02	-.5451E-02	0.7554	1.603	0.9632	-.2689E-02	-.2060E-02
0.9247E-02	-.5734E-02	0.7882	1.713	0.9605	-.2637E-02	-.2302E-02
0.1070E-01	-.6007E-02	0.8157	1.812	0.9631	-.2597E-02	-.2542E-02
0.1216E-01	-.5804E-02	0.8433	1.913	0.9646	-.2356E-02	-.2575E-02
0.1360E-01	-.5543E-02	0.8644	2.005	0.9682	-.2126E-02	-.2561E-02
0.1503E-01	-.4168E-02	0.8784	2.065	0.9728	-.1541E-02	-.1978E-02
0.1648E-01	-.3406E-02	0.8904	2.127	0.9766	-.1212E-02	-.1658E-02
0.1795E-01	-.1916E-02	0.8960	2.161	0.9794	-.6679E-03	-.9458E-03
0.1942E-01	-.1229E-02	0.8988	2.179	0.9777	-.4241E-03	-.6093E-03
0.2088E-01	-.4595E-03	0.8990	2.185	0.9807	-.1579E-03	-.2289E-03
0.2235E-01	-.8991E-04	0.8992	2.186	0.9789	-.3088E-04	-.4472E-04
0.2384E-01	-.4541E-04	0.9000	2.192	0.9788	-.1554E-04	-.2263E-04
0.2532E-01	0.6199E-05	0.9009	2.194	0.9761	0.2119E-05	0.3082E-05
0.2676E-01	0.1284E-04	0.9019	2.201	0.9730	0.4368E-05	0.6376E-05
0.2824E-01	0.1172E-04	0.9134	2.261	0.9145	0.3847E-05	0.5569E-05

0.2973E-01	0.1683E-04	0.9204	2.303	0.6427	0.5391E-05	0.5688E-05
0.3118E-01	0.1472E-04	0.9869	2.694	0.4154	0.3771E-05	0.3521E-05

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16107.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL. X = 0.1397)

X = 0.1397
Z = -.1270E-01
M ref = 2.850
U ref hw = 576.9
RHO ref hw = 0.8050
TAU wall preston = 282.5
P wall mean flow = 0.5889E+05

Y	(rhou)"v" RHO U**2	U Uref	M	Ps Pwall	(u"v") U**2	RHO(u"v") RHOref Uref**2
0.1620E-02	-.1152E-02	0.6730	1.363	1.050	-.6606E-03	-.3969E-03
0.3064E-02	-.1812E-02	0.7056	1.455	1.040	-.9813E-03	-.6645E-03
0.4523E-02	-.2620E-02	0.7227	1.506	1.036	-.1373E-02	-.9934E-03
0.5978E-02	-.3627E-02	0.7335	1.544	1.024	-.1857E-02	-.1395E-02
0.7418E-02	-.4793E-02	0.7597	1.629	1.020	-.2325E-02	-.1936E-02
0.8848E-02	-.4645E-02	0.7762	1.685	1.015	-.2175E-02	-.1929E-02
0.1030E-01	-.4862E-02	0.7945	1.750	1.012	-.2185E-02	-.2084E-02
0.1178E-01	-.4397E-02	0.8200	1.842	1.012	-.1865E-02	-.1971E-02
0.1325E-01	-.4003E-02	0.8370	1.907	1.013	-.1631E-02	-.1849E-02
0.1471E-01	-.4453E-02	0.8570	1.993	1.018	-.1720E-02	-.2140E-02
0.1618E-01	-.4045E-02	0.8713	2.057	1.021	-.1503E-02	-.1996E-02
0.1766E-01	-.2408E-02	0.8863	2.126	1.021	-.8574E-03	-.1218E-02
0.1913E-01	-.1454E-02	0.8947	2.166	1.022	-.5052E-03	-.7460E-03
0.2059E-01	-.1276E-02	0.8969	2.182	1.025	-.4393E-03	-.6597E-03
0.2206E-01	-.5516E-03	0.8975	2.193	1.027	-.1887E-03	-.2867E-03
0.2355E-01	-.1844E-03	0.8983	2.193	1.028	-.6305E-04	-.9595E-04
0.2501E-01	-.4960E-04	0.8951	2.189	1.030	-.1701E-04	-.2582E-04
0.2649E-01	0.9346E-05	0.8962	2.193	1.031	0.3198E-05	0.4877E-05
0.2798E-01	0.1018E-04	0.8932	2.183	1.034	0.3502E-05	0.5309E-05
0.2943E-01	-.3902E-05	0.8936	2.184	1.037	-.1342E-05	-.2042E-05
0.3093E-01	-.1355E-05	0.8936	2.183	1.038	-.4665E-06	-.7094E-06
0.3244E-01	-.9958E-06	0.8940	2.186	1.040	-.3420E-06	-.5231E-06
0.3390E-01	-.7035E-06	0.8944	2.193	1.038	-.2407E-06	-.3697E-06

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16108.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS VERTICAL
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = -.3810E-01)

X = -.5080E-01
Z = -.1270E-01
M ref = 2.850
U ref hw = 579.1
RHO ref hw = 0.7988
TAU wall preston = 133.8
P wall mean flow = 0.2663E+05

Y	(rhou)"v" RHO U**2	U Uref	M	Ps Pwall	(u"v") U**2	RHO(u"v") RHOref Uref**2
0.2000E-02	-.2218E-02	0.7804	1.675	1.084	-.1045E-02	-.4424E-03
0.3317E-02	-.2110E-02	0.8071	1.772	1.102	-.9352E-03	-.4504E-03
0.4767E-02	-.2108E-02	0.8390	1.892	1.083	-.8667E-03	-.4677E-03
0.6208E-02	-.2369E-02	0.8654	2.002	1.075	-.9100E-03	-.5457E-03
0.7646E-02	-.2302E-02	0.8815	2.071	1.074	-.8478E-03	-.5432E-03
0.9103E-02	-.2353E-02	0.8982	2.150	1.071	-.8260E-03	-.5690E-03
0.1056E-01	-.2246E-02	0.9134	2.221	1.072	-.7555E-03	-.5558E-03
0.1201E-01	-.2043E-02	0.9278	2.296	1.068	-.6573E-03	-.5150E-03
0.1347E-01	-.1870E-02	0.9491	2.405	1.066	-.5642E-03	-.4842E-03
0.1490E-01	-.1641E-02	0.9594	2.470	1.063	-.4770E-03	-.4306E-03
0.1634E-01	-.1676E-02	0.9721	2.540	1.060	-.4681E-03	-.4455E-03
0.1778E-01	-.1268E-02	0.9814	2.604	1.058	-.3414E-03	-.3408E-03
0.1925E-01	-.1167E-02	0.9878	2.654	1.061	-.3058E-03	-.3181E-03

0.2072E-01	-.7738E-03	0.9939	2.703	1.057	-.1973E-03	-.2120E-03
0.2218E-01	-.6012E-03	1.001	2.759	1.054	-.1486E-03	-.1659E-03
0.2364E-01	-.4041E-03	1.005	2.788	1.060	-.9833E-04	-.1127E-03
0.2514E-01	-.1367E-03	1.004	2.802	1.059	-.3302E-04	-.3821E-04
0.2660E-01	-.1980E-03	1.005	2.810	1.061	-.4761E-04	-.5553E-04
0.2806E-01	-.1454E-03	1.007	2.830	1.065	-.3460E-04	-.4107E-04
0.2953E-01	-.6325E-04	1.006	2.830	1.071	-.1505E-04	-.1797E-04
0.3101E-01	-.3463E-04	1.006	2.832	1.075	-.8229E-05	-.9868E-05
0.3248E-01	-.1082E-04	1.007	2.840	1.069	-.2560E-05	-.3071E-05
0.3396E-01	0.5083E-05					
0.3545E-01	-.9763E-07					
0.3690E-01	0.2714E-05					

*********************ALPHA=16 DEGREES, NORMAL-WIRE SURVEYS********************

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16N01.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS VERTICAL
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = -.3810E-01)
X = -.5080E-01
Z = -.1270E-01
M ref = 2.850
U ref hw = 559.4
RHO ref hw = 0.8563
TAU wall preston = 133.8
P wall mean flow = 0.2663E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1300E-02	0.2057	0.7583	1.604	1.079	0.1141E-01	0.4409E-02
0.2546E-02	0.1593	0.7939	1.723	1.093	0.5889E-02	0.2659E-02
0.4004E-02	0.1461	0.8277	1.847	1.085	0.4228E-02	0.2179E-02
0.5410E-02	0.1453	0.8488	1.932	1.080	0.3756E-02	0.2107E-02
0.6847E-02	0.1446	0.8739	2.038	1.077	0.3257E-02	0.2029E-02
0.8303E-02	0.1383	0.8883	2.102	1.073	0.2752E-02	0.1816E-02
0.9757E-02	0.1445	0.9097	2.203	1.068	0.2652E-02	0.1913E-02
0.1122E-01	0.1408	0.9185	2.249	1.070	0.2379E-02	0.1792E-02
0.1268E-01	0.1405	0.9382	2.349	1.068	0.2099E-02	0.1722E-02
0.1413E-01	0.1339	0.9484	2.405	1.068	0.1783E-02	0.1533E-02
0.1557E-01	0.1334	0.9639	2.495	1.067	0.1591E-02	0.1470E-02
0.1703E-01	0.1291	0.9748	2.559	1.065	0.1384E-02	0.1343E-02
0.1848E-01	0.1246	0.9844	2.629	1.059	0.1188E-02	0.1210E-02
0.1995E-01	0.1174	0.9924	2.685	1.058	0.9896E-03	0.1050E-02
0.2132E-01	0.1078	0.9936	2.708	1.062	0.8130E-03	0.8807E-03
0.2257E-01	0.9620E-01	1.003	2.776	1.052	0.5994E-03	0.6767E-03
0.2402E-01	0.7735E-01	1.005	2.794	1.059	0.3801E-03	0.4372E-03
0.2549E-01	0.5983E-01	1.004	2.802	1.060	0.2253E-03	0.2609E-03
0.2698E-01	0.4888E-01	1.006	2.817	1.062	0.1480E-03	0.1735E-03
0.2821E-01	0.3288E-01	1.007	2.830	1.066	0.6597E-04	0.7835E-04
0.2961E-01	0.2773E-01	1.006	2.830	1.072	0.4692E-04	0.5604E-04
0.3110E-01	0.2022E-01	1.006	2.832	1.074	0.2488E-04	0.2984E-04
0.3256E-01	0.1398E-01	1.008	2.841	1.068	0.1179E-04	0.1414E-04
0.3405E-01	0.1415E-01					
0.3556E-01	0.1336E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16N02.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = -.1270E-01)
X = -.1270E-01
Z = -.1270E-01
M ref = 2.850
U ref hw = 542.1
RHO ref hw = 0.9116
TAU wall preston = 138.5
P wall mean flow = 0.2170E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.2000E-02	0.1581	0.7723	1.649	1.058	0.6373E-02	0.2078E-02
0.2490E-02	0.1607	0.7886	1.704	1.058	0.6135E-02	0.2138E-02
0.3680E-02	0.1584	0.8161	1.805	1.058	0.5248E-02	0.2050E-02
0.5080E-02	0.1550	0.8410	1.901	1.057	0.4449E-02	0.1926E-02
0.6210E-02	0.1560	0.8625	1.990	1.046	0.4027E-02	0.1891E-02
0.7480E-02	0.1580	0.8787	2.059	1.045	0.3790E-02	0.1903E-02
0.8100E-02	0.1533	0.8898	2.108	1.045	0.3356E-02	0.1767E-02
0.9510E-02	0.1514	0.9018	2.165	1.044	0.3050E-02	0.1693E-02
0.1093E-01	0.1494	0.9205	2.258	1.041	0.2650E-02	0.1595E-02
0.1234E-01	0.1500	0.9346	2.331	1.041	0.2446E-02	0.1569E-02
0.1375E-01	0.1503	0.9471	2.399	1.039	0.2262E-02	0.1534E-02
0.1517E-01	0.1406	0.9599	2.474	1.043	0.1811E-02	0.1311E-02
0.1656E-01	0.1385	0.9681	2.516	1.047	0.1673E-02	0.1257E-02
0.1795E-01	0.1330	0.9779	2.587	1.049	0.1420E-02	0.1131E-02
0.1939E-01	0.1246	0.9896	2.665	1.047	0.1141E-02	0.9612E-03
0.2081E-01	0.1181	0.9917	2.689	1.053	0.9970E-03	0.8609E-03
0.2203E-01	0.1097	0.9996	2.748	1.057	0.8041E-03	0.7279E-03
0.2282E-01	0.1014	1.001	2.757	1.057	0.6802E-03	0.6199E-03
0.2417E-01	0.8896E-01	1.002	2.778	1.057	0.5117E-03	0.4732E-03
0.2562E-01	0.7760E-01	1.007	2.821	1.050	0.3711E-03	0.3516E-03
0.2705E-01	0.6150E-01	1.009	2.838	1.042	0.2287E-03	0.2178E-03
0.2847E-01	0.4049E-01	1.010	2.851	1.044	0.9774E-04	0.9403E-04
0.2982E-01	0.3429E-01	1.009	2.851	1.048	0.7010E-04	0.6772E-04
0.3119E-01	0.2448E-01	1.010	2.851	1.049	0.3573E-04	0.3454E-04
0.3255E-01	0.2125E-01	1.009	2.855	1.047	0.2682E-04	0.2595E-04
0.3391E-01	0.1826E-01					
0.3527E-01	0.1539E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16N03.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = -.6350E-02)
X = -.6300E-02
Z = -.1270E-01
M ref = 2.850
U ref hw = 545.4
RHO ref hw = 0.9006
TAU wall preston = 83.51
P wall mean flow = 0.2426E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.3000E-02	0.2102	0.7832	1.685	1.037	0.1076E-01	0.4017E-02
0.3170E-02	0.2147	0.7876	1.700	1.033	0.1102E-01	0.4167E-02
0.3390E-02	0.1891	0.7927	1.718	1.025	0.8352E-02	0.3202E-02
0.4810E-02	0.1492	0.8356	1.876	0.9689	0.4253E-02	0.1838E-02
0.6240E-02	0.1412	0.8611	1.981	0.9495	0.3336E-02	0.1576E-02
0.7660E-02	0.1456	0.8828	2.077	0.9464	0.3147E-02	0.1628E-02
0.9070E-02	0.1443	0.8980	2.146	0.9443	0.2837E-02	0.1564E-02
0.1050E-01	0.1433	0.9138	2.219	0.9411	0.2558E-02	0.1502E-02
0.1193E-01	0.1441	0.9289	2.297	0.9422	0.2352E-02	0.1482E-02
0.1337E-01	0.1424	0.9444	2.382	0.9378	0.2074E-02	0.1398E-02
0.1480E-01	0.1355	0.9537	2.435	0.9365	0.1762E-02	0.1240E-02
0.1621E-01	0.1343	0.9670	2.512	0.9423	0.1582E-02	0.1192E-02
0.1762E-01	0.1325	0.9764	2.574	0.9430	0.1432E-02	0.1134E-02
0.1905E-01	0.1219	0.9827	2.623	0.9437	0.1146E-02	0.9427E-03
0.2050E-01	0.1125	0.9898	2.670	0.9446	0.9239E-03	0.7888E-03
0.2187E-01	0.1060	0.9987	2.740	0.9394	0.7584E-03	0.6778E-03
0.2324E-01	0.8825E-01	1.004	2.778	0.9448	0.5034E-03	0.4653E-03
0.2461E-01	0.8015E-01	1.003	2.793	0.9427	0.4086E-03	0.3808E-03
0.2594E-01	0.6535E-01	1.005	2.810	0.9386	0.2664E-03	0.2503E-03
0.2725E-01	0.5067E-01	1.007	2.822	0.9422	0.1580E-03	0.1503E-03
0.2868E-01	0.3787E-01	1.007	2.831	0.9449	0.8741E-04	0.8392E-04
0.3013E-01	0.2862E-01	1.009	2.844	0.9402	0.4922E-04	0.4744E-04
0.3157E-01	0.2090E-01	1.008	2.843	0.9418	0.2628E-04	0.2536E-04
0.3287E-01	0.1764E-01					
0.3316E-01	0.1838E-01					

0.3456E-01	0.1498E-01
0.3600E-01	0.1371E-01

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16N04.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL, X = 0.0000E+00)
X = 0.0000E+00
Z = -.1270E-01
M ref = 2.850
U ref hw = 561.6
RHO ref hw = 0.8494
TAU wall preston = 32.70
P wall mean flow = 0.3938E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1300E-02	0.1925	0.3847	0.6917	1.055	0.2760E-01	0.2866E-02
0.2480E-02	0.3474	0.5942	1.146	1.043	0.5704E-01	0.1607E-01
0.3890E-02	0.3145	0.6929	1.408	0.9814	0.3412E-01	0.1367E-01
0.5300E-02	0.2492	0.7656	1.632	0.8528	0.1618E-01	0.7559E-02
0.6700E-02	0.1888	0.8020	1.759	0.7634	0.7905E-02	0.3840E-02
0.8110E-02	0.1528	0.8402	1.904	0.6810	0.4308E-02	0.2187E-02
0.9520E-02	0.1505	0.8702	2.030	0.6478	0.3567E-02	0.1958E-02
0.1093E-01	0.1467	0.8884	2.110	0.6351	0.3065E-02	0.1784E-02
0.1234E-01	0.1473	0.9035	2.181	0.6250	0.2830E-02	0.1732E-02
0.1376E-01	0.1423	0.9204	2.264	0.6169	0.2387E-02	0.1553E-02
0.1517E-01	0.1428	0.9302	2.320	0.6119	0.2246E-02	0.1522E-02
0.1656E-01	0.1417	0.9479	2.417	0.6078	0.1968E-02	0.1438E-02
0.1795E-01	0.1318	0.9570	2.471	0.6033	0.1598E-02	0.1211E-02
0.1926E-01	0.1269	0.9682	2.535	0.5993	0.1374E-02	0.1089E-02
0.2002E-01	0.1227	0.9737	2.573	0.5970	0.1229E-02	0.9995E-03
0.2067E-01	0.1213	0.9783	2.606	0.5950	0.1157E-02	0.9615E-03
0.2210E-01	0.1093	0.9808	2.638	0.5934	0.9053E-03	0.7691E-03
0.2353E-01	0.9268E-01	0.9814	2.659	0.5926	0.6354E-03	0.5477E-03
0.2497E-01	0.7306E-01	0.9891	2.714	0.5884	0.3709E-03	0.3307E-03
0.2641E-01	0.6341E-01	0.9959	2.763	0.5849	0.2644E-03	0.2429E-03
0.2783E-01	0.4936E-01	0.9988	2.785	0.5848	0.1562E-03	0.1459E-03
0.2925E-01	0.3281E-01	1.001	2.804	0.5848	0.6758E-04	0.6396E-04
0.3070E-01	0.2376E-01	1.003	2.814	0.5848	0.3508E-04	0.3342E-04
0.3213E-01	0.1940E-01	1.002	2.816	0.5848	0.2332E-04	0.2226E-04
0.3357E-01	0.1586E-01	1.003	2.824	0.5848	0.1545E-04	0.1483E-04
0.3500E-01	0.1410E-01					
0.3643E-01	0.1353E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16N05.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL, X = 0.6350E-02)
X = 0.6300E-02
Z = -.1270E-01
M ref = 2.850
U ref hw = 543.9
RHO ref hw = 0.9055
TAU wall preston = 71.86
P wall mean flow = 0.4802E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1500E-02	0.3205	0.4765	0.8745	1.015	0.6489E-01	0.1263E-01
0.1990E-02	0.3422	0.5286	0.9901	1.008	0.6574E-01	0.1631E-01
0.3040E-02	0.3425	0.6098	1.182	0.9947	0.5315E-01	0.1854E-01
0.4460E-02	0.2812	0.6818	1.376	0.9657	0.2839E-01	0.1302E-01
0.5870E-02	0.2280	0.7422	1.555	0.9066	0.1492E-01	0.8210E-02
0.7280E-02	0.1925	0.8046	1.764	0.7822	0.8164E-02	0.4984E-02
0.8180E-02	0.1804	0.8398	1.896	0.6853	0.6062E-02	0.3747E-02
0.9610E-02	0.1605	0.8757	2.047	0.5778	0.3971E-02	0.2411E-02
0.1102E-01	0.1452	0.9008	2.167	0.5304	0.2800E-02	0.1749E-02
0.1244E-01	0.1482	0.9173	2.251	0.5146	0.2629E-02	0.1721E-02
0.1384E-01	0.1413	0.9325	2.331	0.5081	0.2169E-02	0.1503E-02
0.1523E-01	0.1389	0.9455	2.403	0.5042	0.1924E-02	0.1405E-02
0.1663E-01	0.1337	0.9533	2.450	0.5027	0.1685E-02	0.1276E-02
0.1807E-01	0.1259	0.9620	2.504	0.5019	0.1403E-02	0.1108E-02
0.1949E-01	0.1145	0.9700	2.562	0.4992	0.1083E-02	0.8912E-03
0.2092E-01	0.1039	0.9786	2.619	0.4959	0.8357E-03	0.7133E-03
0.2233E-01	0.8677E-01	0.9859	2.678	0.4922	0.5446E-03	0.4825E-03
0.2379E-01	0.7284E-01	0.9919	2.726	0.4854	0.3638E-03	0.3292E-03
0.2515E-01	0.5567E-01	0.9961	2.760	0.4796	0.2045E-03	0.1874E-03
0.2657E-01	0.4403E-01	0.9993	2.786	0.4796	0.1242E-03	0.1160E-03
0.2691E-01	0.4205E-01	1.000	2.793	0.4796	0.1125E-03	0.1056E-03
0.2827E-01	0.3173E-01	1.002	2.810	0.4796	0.6279E-04	0.5968E-04
0.2964E-01	0.2541E-01	1.003	2.814	0.4796	0.4011E-04	0.3822E-04
0.3100E-01	0.2039E-01	1.003	2.817	0.4796	0.2573E-04	0.2458E-04
0.3231E-01	0.1476E-01	1.003	2.820	0.4796	0.1344E-04	0.1286E-04
0.3367E-01	0.1461E-01	1.003	2.823	0.4796	0.1313E-04	0.1259E-04
0.3495E-01	0.1390E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16N06.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL, X = 0.1905E-01)
X = 0.1270E-01
Z = -.1270E-01
M ref = 2.850
U ref hw = 548.9
RHO ref hw = 0.8892
TAU wall preston = 106.9
P wall mean flow = 0.5180E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1500E-02	0.2965	0.5374	1.008	1.015	0.4844E-01	0.1351E-01
0.2580E-02	0.3116	0.5910	1.135	0.9978	0.4644E-01	0.1617E-01
0.3980E-02	0.2963	0.6464	1.279	0.9858	0.3548E-01	0.1548E-01
0.5380E-02	0.2691	0.6966	1.417	0.9764	0.2471E-01	0.1312E-01
0.6780E-02	0.2294	0.7398	1.546	0.9714	0.1527E-01	0.9604E-02
0.8200E-02	0.1987	0.7736	1.657	0.9706	0.9958E-02	0.7185E-02
0.9340E-02	0.1923	0.8001	1.746	0.9618	0.8331E-02	0.6613E-02
0.1076E-01	0.1994	0.8466	1.926	0.8834	0.7127E-02	0.6324E-02
0.1216E-01	0.1567	0.8966	2.139	0.6945	0.3372E-02	0.2901E-02
0.1354E-01	0.1355	0.9430	2.378	0.5176	0.1886E-02	0.1494E-02
0.1496E-01	0.1313	0.9691	2.547	0.4502	0.1450E-02	0.1147E-02
0.1639E-01	0.1253	0.9830	2.640	0.4301	0.1187E-02	0.9629E-03
0.1782E-01	0.1158	0.9916	2.703	0.4249	0.9433E-03	0.7927E-03
0.1917E-01	0.9933E-01	0.9966	2.739	0.4236	0.6663E-03	0.5732E-03
0.2052E-01	0.8791E-01	1.002	2.787	0.4236	0.4945E-03	0.4405E-03
0.2147E-01	0.8228E-01	1.002	2.795	0.4236	0.4295E-03	0.3847E-03
0.2283E-01	0.6551E-01	1.003	2.809	0.4236	0.2680E-03	0.2425E-03
0.2333E-01	0.6624E-01	1.003	2.812	0.4236	0.2731E-03	0.2476E-03
0.2390E-01	0.5673E-01	1.004	2.816	0.4236	0.1995E-03	0.1814E-03
0.2430E-01	0.5045E-01	1.004	2.820	0.4236	0.1571E-03	0.1432E-03
0.2569E-01	0.3783E-01	1.005	2.830	0.4236	0.8732E-04	0.8019E-04
0.2713E-01	0.2746E-01	1.004	2.832	0.4236	0.4593E-04	0.4222E-04
0.2855E-01	0.2168E-01	1.006	2.835	0.4236	0.2853E-04	0.2629E-04
0.2999E-01	0.1651E-01	1.005	2.831	0.4236	0.1661E-04	0.1526E-04
0.3143E-01	0.1461E-01	1.005	2.837	0.4236	0.1292E-04	0.1193E-04
0.3286E-01	0.1398E-01	1.005	2.837	0.4236	0.1183E-04	0.1092E-04

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16N07.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL, X = 0.1905E-01)
X = 0.1910E-01
Z = -.1270E-01
M ref = 2.850
U ref hw = 568.2
RHO ref hw = 0.8299
TAU wall preston = 138.8

P wall mean flow = 0.5437E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1500E-02	0.2592	0.5374	1.008	1.015	0.3702E-01	0.1084E-01
0.2681E-02	0.3021	0.5955	1.147	0.9964	0.4309E-01	0.1604E-01
0.4131E-02	0.3006	0.6513	1.292	0.9853	0.3592E-01	0.1680E-01
0.5554E-02	0.2800	0.7008	1.430	0.9762	0.2634E-01	0.1493E-01
0.7013E-02	0.2438	0.7456	1.565	0.9709	0.1686E-01	0.1138E-01
0.8474E-02	0.2165	0.7777	1.671	0.9711	0.1162E-01	0.8950E-02
0.9922E-02	0.1993	0.8194	1.819	0.9471	0.8159E-02	0.7263E-02
0.1136E-01	0.1898	0.8680	2.015	0.8136	0.5775E-02	0.5421E-02
0.1277E-01	0.2065	0.9169	2.239	0.6006	0.5181E-02	0.4432E-02
0.1424E-01	0.1476	0.9557	2.457	0.4798	0.2038E-02	0.1676E-02
0.1570E-01	0.1258	0.9784	2.612	0.4344	0.1235E-02	0.1040E-02
0.1717E-01	0.1151	0.9878	2.673	0.4273	0.9640E-03	0.8363E-03
0.1863E-01	0.1019	0.9947	2.725	0.4237	0.7125E-03	0.6368E-03
0.2010E-01	0.8738E-01	1.001	2.779	0.4236	0.4930E-03	0.4582E-03
0.2158E-01	0.6848E-01	1.002	2.795	0.4236	0.2975E-03	0.2797E-03
0.2304E-01	0.5284E-01	1.003	2.810	0.4236	0.1741E-03	0.1655E-03
0.2440E-01	0.3996E-01	1.004	2.821	0.4236	0.9846E-04	0.9426E-04
0.2559E-01	0.3219E-01	1.005	2.830	0.4236	0.6323E-04	0.6094E-04
0.2684E-01	0.2522E-01	1.004	2.830	0.4236	0.3881E-04	0.3741E-04
0.2817E-01	0.1916E-01	1.006	2.836	0.4236	0.2224E-04	0.2153E-04
0.2958E-01	0.1528E-01	1.005	2.830	0.4236	0.1424E-04	0.1373E-04
0.3016E-01	0.1782E-01	1.005	2.832	0.4236	0.1933E-04	0.1866E-04
0.3089E-01	0.1584E-01	1.005	2.835	0.4236	0.1523E-04	0.1473E-04
0.3157E-01	0.1434E-01	1.005	2.837	0.4236	0.1245E-04	0.1206E-04
0.3249E-01	0.2634E-01	1.005	2.837	0.4236	0.4201E-04	0.4069E-04

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16N08.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL. X = 0.1905E-01)

X = 0.2540E-01
Z = -.1270E-01
M ref = 2.850
U ref hw = 564.9
RHO ref hw = 0.8396
TAU wall preston = 147.3
P wall mean flow = 0.5669E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1300E-02	0.2353	0.5278	0.9859	1.018	0.3122E-01	0.9156E-02
0.1810E-02	0.2440	0.5507	1.037	1.009	0.3178E-01	0.1022E-01
0.3200E-02	0.2963	0.6174	1.202	0.9904	0.3887E-01	0.1648E-01
0.4620E-02	0.3109	0.6759	1.360	0.9833	0.3538E-01	0.1907E-01
0.6040E-02	0.3025	0.7159	1.475	0.9759	0.2904E-01	0.1827E-01
0.7440E-02	0.2465	0.7579	1.604	0.9721	0.1639E-01	0.1215E-01
0.8840E-02	0.2190	0.7856	1.697	0.9692	0.1149E-01	0.9509E-02
0.1022E-01	0.1836	0.8292	1.858	0.9278	0.6593E-02	0.6252E-02
0.1165E-01	0.1743	0.8787	2.060	0.7755	0.4603E-02	0.4489E-02
0.1308E-01	0.1644	0.9273	2.294	0.5640	0.3073E-02	0.2701E-02
0.1452E-01	0.1964	0.9611	2.493	0.4677	0.3458E-02	0.2977E-02
0.1594E-01	0.1316	0.9807	2.627	0.4310	0.1328E-02	0.1170E-02
0.1737E-01	0.9614E-01	0.9890	2.683	0.4265	0.6653E-03	0.6050E-03
0.1881E-01	0.7879E-01	0.9951	2.728	0.4236	0.4246E-03	0.3965E-03
0.2024E-01	0.6180E-01	1.002	2.782	0.4236	0.2458E-03	0.2387E-03
0.2165E-01	0.4861E-01	1.002	2.795	0.4236	0.1499E-03	0.1469E-03
0.2294E-01	0.3750E-01	1.003	2.810	0.4236	0.8775E-04	0.8693E-04
0.2416E-01	0.2836E-01	1.004	2.818	0.4236	0.4972E-04	0.4955E-04
0.2552E-01	0.1831E-01	1.005	2.830	0.4236	0.2046E-04	0.2056E-04
0.2689E-01	0.1682E-01	1.004	2.830	0.4236	0.1726E-04	0.1735E-04
0.2826E-01	0.1541E-01	1.006	2.836	0.4236	0.1439E-04	0.1453E-04
0.2925E-01	0.1424E-01	1.005	2.832	0.4236	0.1235E-04	0.1243E-04
0.3063E-01	0.1345E-01	1.005	2.834	0.4236	0.1099E-04	0.1108E-04
0.3200E-01	0.1274E-01	1.005	2.837	0.4236	0.9827E-05	0.9925E-05

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16N09.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL. X = 0.3810E-01)

X = 0.3810E-01
Z = -.1270E-01
M ref = 2.850
U ref hw = 556.2
RHO ref hw = 0.8660
TAU wall preston = 172.9
P wall mean flow = 0.6085E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1300E-02	0.2246	0.5657	1.071	0.9932	0.2593E-01	0.9398E-02
0.2500E-02	0.2710	0.5986	1.151	0.9764	0.3448E-01	0.1419E-01
0.3910E-02	0.3062	0.6426	1.266	0.9686	0.3846E-01	0.1900E-01
0.5310E-02	0.3162	0.6817	1.375	0.9610	0.3594E-01	0.2076E-01
0.6690E-02	0.2940	0.7131	1.466	0.9557	0.2774E-01	0.1813E-01
0.8130E-02	0.2836	0.7490	1.576	0.9556	0.2248E-01	0.1697E-01
0.9548E-02	0.2315	0.7842	1.695	0.9546	0.1289E-01	0.1124E-01
0.1099E-01	0.1984	0.8121	1.792	0.9558	0.8368E-02	0.8165E-02
0.1241E-01	0.1736	0.8404	1.903	0.9542	0.5562E-02	0.6113E-02
0.1384E-01	0.1483	0.8619	1.991	0.9484	0.3633E-02	0.4344E-02
0.1529E-01	0.1232	0.8818	2.083	0.9413	0.2237E-02	0.2904E-02
0.1672E-01	0.8309E-01	0.9143	2.238	0.8642	0.8398E-03	0.1156E-02
0.1813E-01	0.2116	0.9591	2.487	0.6356	0.4043E-02	0.5052E-02
0.1956E-01	0.1467	0.9588	2.503	0.4849	0.1906E-02	0.1841E-02
0.2099E-01	0.2929E-01	0.9847	2.684	0.4172	0.6167E-04	0.5893E-04
0.2243E-01	0.1817E-01	0.9968	2.772	0.3908	0.2149E-04	0.2052E-04
0.2386E-01	0.1708E-01	1.004	2.816	0.3815	0.1808E-04	0.1739E-04
0.2530E-01	0.1529E-01	1.005	2.830	0.3787	0.1427E-04	0.1376E-04
0.2674E-01	0.1511E-01	1.004	2.823	0.3785	0.1404E-04	0.1347E-04
0.2818E-01	0.1503E-01	1.003	2.823	0.3785	0.1389E-04	0.1332E-04
0.2965E-01	0.1468E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16N10.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL. X = 0.3810E-01)

X = 0.5080E-01
Z = -.1270E-01
M ref = 2.850
U ref hw = 558.3
RHO ref hw = 0.8596
TAU wall preston = 197.3
P wall mean flow = 0.6221E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1300E-02	0.2326	0.5657	1.071	0.9932	0.2781E-01	0.1031E-01
0.1650E-02	0.2247	0.5769	1.099	0.9874	0.2517E-01	0.9754E-02
0.2770E-02	0.2643	0.6055	1.170	0.9740	0.3211E-01	0.1391E-01
0.4190E-02	0.2855	0.6459	1.276	0.9660	0.3304E-01	0.1690E-01
0.5616E-02	0.2850	0.6896	1.397	0.9595	0.2841E-01	0.1730E-01
0.7050E-02	0.3080	0.7236	1.498	0.9554	0.2925E-01	0.2039E-01
0.8470E-02	0.2830	0.7581	1.606	0.9548	0.2156E-01	0.1726E-01
0.9889E-02	0.2556	0.7918	1.720	0.9552	0.1522E-01	0.1398E-01
0.1134E-01	0.2169	0.8180	1.814	0.9546	0.9728E-02	0.9929E-02
0.1278E-01	0.1828	0.8470	1.928	0.9552	0.5980E-02	0.6901E-02
0.1418E-01	0.1474	0.8661	2.009	0.9497	0.3511E-02	0.4374E-02
0.1563E-01	0.1171	0.8878	2.112	0.9349	0.1948E-02	0.2641E-02
0.1706E-01	0.8133E-01	0.9280	2.309	0.8161	0.7381E-03	0.1044E-02
0.1850E-01	0.5425E-01	0.9676	2.538	0.5713	0.2503E-03	0.2994E-03
0.1993E-01	0.3521E-01	0.9650	2.549	0.4630	0.1040E-03	0.1018E-03
0.2137E-01	0.9864E-01	0.9929	2.732	0.4031	0.6621E-03	0.6477E-03
0.2278E-01	0.1639	0.9992	2.790	0.3876	0.1714E-02	0.1681E-02
0.2424E-01	0.1807E-01	1.004	2.822	0.3804	0.2010E-04	0.1979E-04

0.2569E-01	0.1313E-01	1.005	2.829	0.3786	0.1053E-04	0.1037E-04
0.2713E-01	0.1351E-01	1.004	2.823	0.3785	0.1122E-04	0.1101E-04

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16N11.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL. X = 0.7620E-01)

X = 0.7620E-01
Z = -.1270E-01
M ref = 2.850
U ref hw = 562.8
RHO ref hw = 0.8457
TAU wall preston = 234.6
P wall mean flow = 0.6280E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1300E-02	0.2098	0.6230	1.217	1.016	0.1914E-01	0.9457E-02
0.1670E-02	0.2283	0.6297	1.234	1.006	0.2221E-01	0.1118E-01
0.2470E-02	0.2488	0.6472	1.280	0.9958	0.2497E-01	0.1337E-01
0.3890E-02	0.2700	0.6785	1.367	0.9779	0.2647E-01	0.1587E-01
0.5380E-02	0.2866	0.7068	1.451	0.9693	0.2688E-01	0.1800E-01
0.6830E-02	0.2889	0.7331	1.532	0.9647	0.2465E-01	0.1833E-01
0.8300E-02	0.2919	0.7649	1.634	0.9615	0.2215E-01	0.1865E-01
0.9780E-02	0.2856	0.7933	1.733	0.9621	0.1870E-01	0.1772E-01
0.1126E-01	0.2569	0.8284	1.859	0.9611	0.1288E-01	0.1404E-01
0.1274E-01	0.2308	0.8461	1.928	0.9664	0.9531E-02	0.1123E-01
0.1422E-01	0.1940	0.8688	2.023	0.9693	0.5976E-02	0.7779E-02
0.1567E-01	0.1651	0.8869	2.105	0.9760	0.3909E-02	0.5545E-02
0.1717E-01	0.1167	0.8916	2.135	0.9770	0.1881E-02	0.2749E-02
0.1866E-01	0.8128E-01	0.8953	2.165	0.9810	0.8791E-03	0.1326E-02
0.2017E-01	0.4979E-01	0.8979	2.177	0.9784	0.3250E-03	0.4946E-03
0.2165E-01	0.3268E-01	0.8972	2.180	0.9815	0.1394E-03	0.2135E-03
0.2315E-01	0.2072E-01	0.8985	2.188	0.9774	0.5556E-04	0.8528E-04
0.2465E-01	0.1795E-01	0.8990	2.187	0.9776	0.4173E-04	0.6403E-04
0.2614E-01	0.1770E-01	0.9020	2.200	0.9750	0.3993E-04	0.6184E-04
0.2766E-01	0.1814E-01	0.9061	2.224	0.9514	0.4074E-04	0.6290E-04
0.2916E-01	0.2247E-01	0.9206	2.301	0.7741	0.5691E-04	0.7653E-04

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16N12.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL. X = 0.7620E-01)

X = 0.1016
Z = -.1270E-01
M ref = 2.850
U ref hw = 563.0
RHO ref hw = 0.8454
TAU wall preston = 257.4
P wall mean flow = 0.5925E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1300E-02	0.2244	0.6230	1.217	1.016	0.2190E-01	0.1021E-01
0.1680E-02	0.2269	0.6299	1.235	1.006	0.2193E-01	0.1041E-01
0.1989E-02	0.2369	0.6363	1.252	1.001	0.2343E-01	0.1137E-01
0.3281E-02	0.2418	0.6635	1.325	0.9842	0.2233E-01	0.1195E-01
0.4712E-02	0.2672	0.6908	1.405	0.9731	0.2473E-01	0.1471E-01
0.6143E-02	0.2725	0.7179	1.484	0.9661	0.2331E-01	0.1535E-01
0.7576E-02	0.2767	0.7487	1.582	0.9640	0.2125E-01	0.1587E-01
0.9007E-02	0.2837	0.7827	1.694	0.9603	0.1937E-01	0.1653E-01
0.1046E-01	0.2710	0.8094	1.789	0.9632	0.1566E-01	0.1495E-01
0.1192E-01	0.2454	0.8428	1.911	0.9638	0.1101E-01	0.1199E-01
0.1335E-01	0.2365	0.8618	1.994	0.9677	0.9205E-02	0.1097E-01
0.1481E-01	0.2014	0.8744	2.047	0.9715	0.6245E-02	0.7874E-02
0.1627E-01	0.1730	0.8900	2.123	0.9767	0.4195E-02	0.5717E-02
0.1772E-01	0.1229	0.8945	2.152	0.9786	0.2042E-02	0.2865E-02
0.1918E-01	0.9689E-01	0.8975	2.174	0.9789	0.1236E-02	0.1770E-02

0.2065E-01	0.5814E-01	0.8992	2.184	0.9800	0.4392E-03	0.6358E-03
0.2210E-01	0.2466E-01	0.8987	2.184	0.9798	0.7901E-04	0.1144E-03
0.2358E-01	0.2009E-01	0.8997	2.191	0.9785	0.5199E-04	0.7563E-04
0.2506E-01	0.1757E-01	0.9001	2.191	0.9767	0.3979E-04	0.5775E-04
0.2653E-01	0.1696E-01	0.9017	2.200	0.9748	0.3666E-04	0.5355E-04
0.2802E-01	0.1609E-01	0.9091	2.242	0.9366	0.3134E-04	0.4569E-04

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC16N13.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-16 DEG OFF VERTICAL. X = 0.1397)

X = 0.1397
Z = -.1270E-01
M ref = 2.850
U ref hw = 563.7
RHO ref hw = 0.8433
TAU wall preston = 282.5
P wall mean flow = 0.5889E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.1300E-02	0.3558E-01	0.6646	1.341	1.053	0.4742E-03	0.2764E-03
0.1530E-02	0.1046	0.6708	1.358	1.051	0.4017E-02	0.2395E-02
0.1890E-02	0.1771	0.6794	1.380	1.048	0.1121E-01	0.6882E-02
0.2270E-02	0.2115	0.6881	1.403	1.045	0.1553E-01	0.9829E-02
0.2640E-02	0.2137	0.6963	1.427	1.041	0.1540E-01	0.1004E-01
0.3000E-02	0.2175	0.7042	1.450	1.040	0.1549E-01	0.1043E-01
0.3970E-02	0.2294	0.7191	1.495	1.039	0.1629E-01	0.1164E-01
0.5180E-02	0.2335	0.7360	1.550	1.031	0.1575E-01	0.1201E-01
0.6680E-02	0.2356	0.7485	1.591	1.022	0.1524E-01	0.1212E-01
0.8160E-02	0.2468	0.7680	1.658	1.017	0.1535E-01	0.1320E-01
0.9690E-02	0.2487	0.7866	1.721	1.013	0.1438E-01	0.1328E-01
0.1119E-01	0.2475	0.8091	1.801	1.012	0.1288E-01	0.1300E-01
0.1270E-01	0.2503	0.8324	1.889	1.012	0.1177E-01	0.1309E-01
0.1422E-01	0.2268	0.8511	1.967	1.016	0.8757E-02	0.1060E-01
0.1573E-01	0.2130	0.8669	2.037	1.020	0.7082E-02	0.9221E-02
0.1727E-01	0.2016	0.8823	2.108	1.021	0.5806E-02	0.8103E-02
0.1879E-01	0.1560	0.8940	2.162	1.022	0.3249E-02	0.4777E-02
0.2032E-01	0.1277	0.8959	2.177	1.024	0.2138E-02	0.3195E-02
0.2185E-01	0.9725E-01	0.8979	2.193	1.027	0.1216E-02	0.1847E-02
0.2341E-01	0.7467E-01	0.8985	2.193	1.028	0.7168E-03	0.1091E-02
0.2493E-01	0.4409E-01	0.8954	2.190	1.030	0.2510E-03	0.3812E-03
0.2649E-01	0.2599E-01	0.8962	2.193	1.031	0.8689E-04	0.1325E-03
0.2798E-01	0.1603E-01	0.8932	2.183	1.034	0.3345E-04	0.5071E-04
0.2784E-01	0.1803E-01	0.8933	2.184	1.034	0.4228E-04	0.6413E-04
0.2787E-01	0.1481E-01	0.8932	2.183	1.034	0.2853E-04	0.4327E-04
0.2789E-01	0.1506E-01	0.8932	2.183	1.034	0.2951E-04	0.4475E-04

********************ALPHA=20 DEGREES, INCLINED-WIRE SURVEYS********************

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20I01.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS VERTICAL
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = -.3810E-01)

X = -.5080E-01
Z = -.1270E-01
M ref = 2.790
U ref hw = 570.0
RHO ref hw = 0.8661
TAU wall preston = 141.7
P wall mean flow = 0.2174E+05

Y	(rhou)"v" RHO U**2	U Uref	M	Ps Pwall	(u"v") U**2	RHO(u"v") RHOref Uref**2
0.2000E-02	-.2943E-02	0.7608	1.588	1.078	-.1465E-02	-.4307E-03
0.3216E-02	-.2660E-02	0.7958	1.707	1.076	-.1228E-02	-.4165E-03
0.4657E-02	.2772E-02	0.8263	1.815	1.073	-.1196E-02	.4574E-03
0.6103E-02	-.2839E-02	0.8525	1.921	1.073	-.1147E-02	-.4912E-03

0.7527E-02	-.2702E-02	0.8723	2.004	1.068	-.1037E-02	-.4808E-03
0.8941E-02	-.2560E-02	0.8935	2.097	1.069	-.9278E-03	-.4716E-03
0.1037E-01	-.2196E-02	0.9069	2.161	1.076	-.7657E-03	-.4162E-03
0.1183E-01	-.1810E-02	0.9244	2.247	1.071	-.5993E-03	-.3506E-03
0.1329E-01	-.1562E-02	0.9396	2.326	1.068	-.4938E-03	-.3088E-03
0.1475E-01	-.1573E-02	0.9545	2.406	1.066	-.4744E-03	-.3167E-03
0.1619E-01	-.1145E-02	0.9667	2.478	1.070	-.3314E-03	-.2356E-03
0.1768E-01	-.9221E-03	0.9759	2.534	1.065	-.2585E-03	-.1912E-03
0.1913E-01	-.7174E-03	0.9893	2.620	1.065	-.1916E-03	-.1515E-03
0.2058E-01	-.4966E-03	0.9950	2.662	1.069	-.1295E-03	-.1061E-03
0.2204E-01	-.4917E-03	1.001	2.716	1.067	-.1244E-03	-.1060E-03
0.2350E-01	-.2801E-03	1.004	2.743	1.070	-.6986E-04	-.6085E-04
0.2496E-01	-.1536E-03	1.005	2.759	1.075	-.3798E-04	-.3363E-04
0.2643E-01	0.5750E-04	1.006	2.775	1.074	0.1410E-04	0.1260E-04
0.2790E-01	0.4196E-04	1.005	2.776	1.071	0.1028E-04	0.9171E-05
0.2935E-01	0.1576E-05	1.008	2.793	1.066	0.3825E-06	0.3439E-06
0.3083E-01	-.1018E-04					
0.3233E-01	0.4880E-05					
0.3379E-01	0.4492E-06					
0.3527E-01	-.1845E-05					
0.3676E-01	-.1480E-05					
0.3824E-01	-.4806E-05					
0.3974E-01	0.3414E-05					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20102.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY IS 5.5 DEGREES OFF VERTICAL. X = 0.1270E-01)

X = 0.1270E-01
Z = -.1270E-01
M ref = 2.790
U ref hw = 561.6
RHO ref hw = 0.8919
TAU wall preston = 45.80
P wall mean flow = 0.5830E+05

Y	(rhou)"v" / RHO U**2	U / Uref	M	Ps / Pwall	(u"v") / U**2	RHO(u"v") / RHOref Uref**2
0.2000E-02	-.7460E-02	0.3846	0.6839	0.9600	-.6284E-02	-.8185E-03
0.3380E-02	-.1019E-01	0.4818	0.8832	0.9384	-.7769E-02	-.1650E-02
0.4812E-02	-.1438E-01	0.5771	1.098	0.9296	-.9700E-02	-.3156E-02
0.6252E-02	-.1379E-01	0.6432	1.263	0.9289	-.8416E-02	-.3619E-02
0.7685E-02	-.1182E-01	0.7014	1.427	0.9231	-.6518E-02	-.3553E-02
0.9131E-02	-.1244E-01	0.7525	1.584	0.9138	-.6210E-02	-.4128E-02
0.1058E-01	-.1087E-01	0.7971	1.732	0.8998	-.4943E-02	-.3871E-02
0.1201E-01	-.8271E-02	0.8295	1.851	0.8825	-.3490E-02	-.3060E-02
0.1343E-01	-.6633E-02	0.8664	1.997	0.8550	-.2556E-02	-.2528E-02
0.1485E-01	-.2032E-02	0.9028	2.157	0.7993	-.7102E-03	-.7662E-03
0.1632E-01	0.6229E-02	0.9413	2.354	0.6747	0.1936E-02	0.2101E-02
0.1777E-01	0.6770E-03	0.9947	2.678	0.4643	0.1750E-03	0.1691E-03
0.1923E-01	-.1225E-02					
0.2067E-01	-.7252E-03					
0.2216E-01	-.5429E-03					
0.2361E-01	-.1725E-03					
0.2506E-01	-.1698E-03					
0.2651E-01	-.1015E-03					
0.2798E-01	-.3608E-04					
0.2944E-01	-.1623E-04					
0.3091E-01	-.5402E-05					
0.3238E-01	0.5139E-05					
0.3383E-01	0.5909E-05					
0.3532E-01	-.3479E-05					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20103.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-20 DEG OFF VERTICAL. X = 0.2540E-01)

X = 0.2540E-01
Z = -.1270E-01
M ref = 2.790
U ref hw = 566.2
RHO ref hw = 0.8775
TAU wall preston = 98.22
P wall mean flow = 0.6597E+05

Y	(rhou)"v" / RHO U**2	U / Uref	M	Ps / Pwall	(u"v") / U**2	RHO(u"v") / RHOref Uref**2
0.2000E-02	-.9635E-02	0.4281	0.7680	0.9854	-.7796E-02	-.1487E-02
0.3440E-02	-.1321E-01	0.4874	0.8940	0.9584	-.1001E-01	-.2517E-02
0.4891E-02	-.1373E-01	0.5615	1.061	0.9419	-.9466E-02	-.3294E-02
0.6332E-02	-.1183E-01	0.6352	1.243	0.9349	-.7309E-02	-.3468E-02
0.7760E-02	-.1700E-01	0.6934	1.402	0.9312	-.9519E-02	-.5718E-02
0.9173E-02	-.1245E-01	0.7469	1.562	0.9284	-.6303E-02	-.4687E-02
0.1061E-01	-.9729E-02	0.7887	1.698	0.9236	-.4519E-02	-.3950E-02
0.1208E-01	-.8783E-02	0.8330	1.857	0.9132	-.3691E-02	-.3816E-02
0.1354E-01	-.7041E-02	0.8631	1.981	0.8952	-.2740E-02	-.3160E-02
0.1498E-01	-.3893E-02	0.8884	2.090	0.8595	-.1417E-02	-.1746E-02
0.1644E-01	0.1973E-02	0.9090	2.189	0.7971	0.6766E-03	0.8480E-03
0.1792E-01	0.1584E-01	0.9058	2.185	0.6818	0.5444E-02	0.5815E-02
0.1937E-01	0.6439E-02	0.9156	2.242	0.5352	0.2139E-02	0.1889E-02
0.2079E-01	0.6710E-03					
0.2226E-01	-.9979E-04					
0.2373E-01	-.1815E-04					
0.2520E-01	-.9281E-05					
0.2667E-01	-.4964E-05					
0.2814E-01	-.1821E-05					
0.2959E-01	0.1698E-05					
0.3108E-01	0.3778E-05					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20104.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-20 DEG OFF VERTICAL. X = 0.4128E-01)

X = 0.4140E-01
Z = -.1270E-01
M ref = 2.790
U ref hw = 567.9
RHO ref hw = 0.8724
TAU wall preston = 132.9
P wall mean flow = 0.7209E+05

Y	(rhou)"v" / RHO U**2	U / Uref	M	Ps / Pwall	(u"v") / U**2	RHO(u"v") / RHOref Uref**2
0.2000E-02	-.8370E-02	0.4633	0.8422	1.048	-.6520E-02	-.1738E-02
0.3412E-02	-.9564E-02	0.5113	0.9481	1.012	-.7034E-02	-.2296E-02
0.4844E-02	-.1187E-01	0.5562	1.050	0.9887	-.8235E-02	-.3222E-02
0.6277E-02	-.1430E-01	0.6066	1.175	0.9746	-.9212E-02	-.4443E-02
0.7732E-02	-.1396E-01	0.6765	1.358	0.9628	-.8038E-02	-.5117E-02
0.9157E-02	-.1140E-01	0.7159	1.472	0.9556	-.6110E-02	-.4535E-02
0.1060E-01	-.1053E-01	0.7694	1.640	0.9516	-.5073E-02	-.4657E-02
0.1203E-01	-.9023E-02	0.8009	1.747	0.9495	-.4062E-02	-.4224E-02
0.1348E-01	-.6828E-02	0.8404	1.891	0.9491	-.2809E-02	-.3421E-02
0.1495E-01	-.4762E-02	0.8603	1.973	0.9420	-.1863E-02	-.2449E-02
0.1639E-01	-.1702E-02	0.8851	2.085	0.9326	-.6216E-03	-.9037E-03
0.1781E-01	-.2862E-03	0.8909	2.121	0.9125	-.1022E-03	-.1505E-03
0.1922E-01	0.3158E-02	0.9025	2.181	0.8686	0.1088E-02	0.1612E-02
0.2070E-01	0.2664E-01	0.9384	2.364	0.7108	0.8236E-02	0.1173E-01
0.2215E-01	0.3891E-02	0.9782	2.601	0.4441	0.1050E-02	0.1131E-02
0.2362E-01	0.1386E-03					
0.2506E-01	-.3117E-05					
0.2654E-01	0.5068E-06					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20105.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-20 DEG OFF VERTICAL. X = 0.4128E 01)

X = 0.5710E-01
Z = -.1270E-01

M ref = 2.790
U ref hw = 568.4
RHO ref hw = 0.8709
TAU wall preston = 179.6
P wall mean flow = 0.7501E+05

Y	(rhou)"v" RHO U**2	U Uref	M	Ps Pwall	(u"v") U**2	RHO(u"v") RHOref Uref**2
0.2000E-02	-.7682E-02	0.4633	0.8422	1.048	-.5985E-02	-.1660E-02
0.3427E-02	-.7826E-02	0.5118	0.9493	1.012	-.5753E-02	-.1958E-02
0.4868E-02	-.9374E-02	0.5563	1.051	0.9884	-.6503E-02	-.2648E-02
0.6303E-02	-.1177E-01	0.6072	1.176	0.9744	-.7578E-02	-.3812E-02
0.7751E-02	-.1339E-01	0.6769	1.359	0.9628	-.7702E-02	-.5110E-02
0.9211E-02	-.1369E-01	0.7169	1.475	0.9557	-.7324E-02	-.5681E-02
0.1064E-01	-.1151E-01	0.7697	1.641	0.9515	-.5541E-02	-.5301E-02
0.1208E-01	-.7419E-02	0.8042	1.759	0.9492	-.3316E-02	-.3634E-02
0.1349E-01	-.7140E-02	0.8406	1.892	0.9491	-.2936E-02	-.3723E-02
0.1497E-01	-.4475E-02	0.8604	1.973	0.9418	-.1750E-02	-.2395E-02
0.1642E-01	-.3060E-02	0.8852	2.085	0.9322	-.1117E-02	-.1690E-02
0.1789E-01	-.1076E-02	0.8916	2.125	0.9108	-.3835E-03	-.5886E-03
0.1934E-01	-.1927E-03	0.9036	2.187	0.8634	-.6615E-04	-.1020E-03
0.2082E-01	0.5099E-04	0.9408	2.377	0.6891	0.1564E-04	0.2273E-04
0.2229E-01	0.1190E-03	0.9733	2.571	0.4252	0.3264E-04	0.3425E-04
0.2374E-01	0.1970E-02					
0.2520E-01	0.2383E-01					
0.2666E-01	0.4882E-03					
0.2814E-01	-.5725E-05					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20106.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-20 DEG OFF VERTICAL. X = 0.7620E-01)
X = 0.7620E-01
Z = -.1270E-01
M ref = 2.790
U ref hw = 569.4
RHO ref hw = 0.8679
TAU wall preston = 224.3
P wall mean flow = 0.7715E+05

Y	(rhou)"v" RHO U**2	U Uref	M	Ps Pwall	(u"v") U**2	RHO(u"v") RHOref Uref**2
0.2000E-02	-.5098E-02	0.5547	1.047	0.9841	-.3544E-02	-.1468E-02
0.3440E-02	-.6261E-02	0.5812	1.110	0.9642	-.4194E-02	-.1913E-02
0.4870E-02	-.7438E-02	0.6075	1.177	0.9497	-.4785E-02	-.2419E-02
0.6290E-02	-.1002E-01	0.6360	1.252	0.9376	-.6158E-02	-.3475E-02
0.7750E-02	-.1095E-01	0.6753	1.360	0.9293	-.6296E-02	-.4154E-02
0.9200E-02	-.1101E-01	0.7109	1.462	0.9244	-.5933E-02	-.4502E-02
0.1068E-01	-.1186E-01	0.7524	1.591	0.9249	-.5893E-02	-.5298E-02
0.1213E-01	-.1061E-01	0.7836	1.694	0.9236	-.4939E-02	-.5025E-02
0.1359E-01	-.6444E-02	0.8183	1.816	0.9287	-.2779E-02	-.3267E-02
0.1506E-01	-.5884E-02	0.8523	1.946	0.9336	-.2339E-02	-.3177E-02
0.1653E-01	-.4584E-02	0.8660	2.005	0.9371	-.1757E-02	-.2542E-02
0.1797E-01	-.2457E-02	0.8751	2.052	0.9401	-.9151E-03	-.1391E-02
0.1945E-01	-.8277E-03	0.8764	2.066	0.9408	-.3057E-03	-.4713E-03
0.2092E-01	-.2826E-03	0.8755	2.066	0.9414	-.1044E-03	-.1610E-03
0.2239E-01	-.9608E-05	0.8735	2.058	0.9405	-.3566E-05	-.5454E-05
0.2385E-01	0.2222E-04	0.8729	2.058	0.9365	0.8247E-05	0.1256E-04
0.2534E-01	0.5803E-04	0.8717	2.051	0.9328	0.2163E-04	0.3258E-04
0.2679E-01	0.7304E-04	0.8708	2.045	0.9313	0.2733E-04	0.4086E-04
0.2829E-01	0.1189E-03	0.8709	2.044	0.9311	0.4451E-04	0.6647E-04
0.2979E-01	0.1983E-02	0.8716	2.052	0.9162	0.7386E-03	0.1094E-02
0.3125E-01	0.1118E-01	0.9190	2.274	0.7221	0.3642E-02	0.5222E-02
0.3274E-01	-.2310E-03					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20107.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-20 DEG OFF VERTICAL. X = 0.1143)
X = 0.9520E-01
Z = -.1270E-01
M ref = 2.790
U ref hw = 571.0
RHO ref hw = 0.8630
TAU wall preston = 255.0
P wall mean flow = 0.7874E+05

Y	(rhou)"v" RHO U**2	U Uref	M	Ps Pwall	(u"v") U**2	RHO(u"v") RHOref Uref**2
0.2000E-02	-.1564E-02	0.6143	1.187	0.9874	-.1000E-02	-.5450E-03
0.3443E-02	-.2963E-02	0.6411	1.257	0.9672	-.1815E-02	-.1087E-02
0.4824E-02	-.3662E-02	0.6652	1.324	0.9572	-.2153E-02	-.1415E-02
0.6204E-02	-.6193E-02	0.6787	1.363	0.9474	-.3552E-02	-.2451E-02
0.7664E-02	-.9005E-02	0.7005	1.427	0.9424	-.4963E-02	-.3731E-02
0.9124E-02	-.1025E-01	0.7301	1.521	0.9404	-.5324E-02	-.4535E-02
0.1057E-01	-.1130E-01	0.7483	1.575	0.9393	-.5669E-02	-.5176E-02
0.1201E-01	-.1217E-01	0.7928	1.724	0.9386	-.5560E-02	-.6074E-02
0.1344E-01	-.1247E-01	0.8083	1.780	0.9418	-.5499E-02	-.6432E-02
0.1492E-01	-.8779E-02	0.8297	1.862	0.9476	-.3677E-02	-.4735E-02
0.1639E-01	-.8091E-02	0.8440	1.918	0.9502	-.3274E-02	-.4484E-02
0.1786E-01	-.6974E-02	0.8600	1.983	0.9515	-.2710E-02	-.3973E-02
0.1932E-01	-.3835E-02	0.8621	1.995	0.9568	-.1480E-02	-.2207E-02
0.2081E-01	-.2095E-02	0.8652	2.009	0.9616	-.8014E-03	-.1218E-02
0.2229E-01	-.8986E-03	0.8617	1.998	0.9706	-.3460E-03	-.5253E-03
0.2376E-01	-.2221E-03	0.8595	1.993	0.9735	-.8579E-04	-.1300E-03
0.2523E-01	-.4553E-04	0.8592	1.986	0.9745	-.1766E-04	-.2661E-04
0.2670E-01	0.6953E-04	0.8559	1.982	0.9738	0.2704E-04	0.4053E-04
0.2817E-01	0.9149E-04	0.8551	1.980	0.9689	0.3563E-04	0.5302E-04
0.2966E-01	0.1160E-03	0.8539	1.974	0.9685	0.4534E-04	0.6704E-04
0.3113E-01	0.1361E-03	0.8583	1.988	0.9629	0.5272E-04	0.7861E-04
0.3261E-01	0.1404E-03	0.8590	1.993	0.9614	0.5424E-04	0.8116E-04
0.3410E-01	0.1658E-03	0.8569	1.992	0.9566	0.6408E-04	0.9530E-04

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20108.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-20 DEG OFF VERTICAL. X = 0.1143)
X = 0.1143
Z = -.1270E-01
M ref = 2.790
U ref hw = 564.2
RHO ref hw = 0.8838
TAU wall preston = 272.6
P wall mean flow = 0.8032E+05

Y	(rhou)"v" RHO U**2	U Uref	M	Ps Pwall	(u"v") U**2	RHO(u"v") RHOref Uref**2
0.2000E-02	-.2509E-02	0.6143	1.187	0.9874	-.1605E-02	-.8921E-03
0.3450E-02	-.3524E-02	0.6411	1.257	0.9671	-.2159E-02	-.1319E-02
0.4903E-02	-.5225E-02	0.6680	1.332	0.9569	-.3056E-02	-.2074E-02
0.6321E-02	-.7760E-02	0.6805	1.369	0.9467	-.4435E-02	-.3144E-02
0.7753E-02	-.9052E-02	0.7027	1.433	0.9419	-.4968E-02	-.3843E-02
0.9178E-02	-.1086E-01	0.7312	1.524	0.9401	-.5627E-02	-.4912E-02
0.1064E-01	-.1006E-01	0.7482	1.575	0.9394	-.5050E-02	-.4704E-02
0.1208E-01	-.9950E-02	0.7908	1.717	0.9389	-.4567E-02	-.5051E-02
0.1354E-01	-.1004E-01	0.8127	1.797	0.9420	-.4379E-02	-.5325E-02
0.1498E-01	-.7659E-02	0.8301	1.864	0.9478	-.3205E-02	-.4217E-02
0.1646E-01	-.5657E-02	0.8447	1.921	0.9506	-.2285E-02	-.3204E-02
0.1792E-01	-.3897E-02	0.8604	1.985	0.9514	-.1513E-02	-.2267E-02
0.1937E-01	-.2243E-02	0.8621	1.995	0.9570	-.8653E-03	-.1317E-02
0.2083E-01	-.7294E-03	0.8651	2.008	0.9617	-.2791E-03	-.4327E-03
0.2230E-01	-.7470E-03	0.8616	1.998	0.9707	-.2877E-03	-.4455E-03
0.2376E-01	-.5950E-03	0.8595	1.993	0.9735	-.2299E-03	-.3552E-03

0.2521E-01	-.2476E-03	0.8593	1.987	0.9746	-.9601E-04	-.1476E-03
0.2669E-01	-.7967E-04	0.8560	1.982	0.9738	-.3098E-04	-.4738E-04
0.2814E-01	-.2461E-04	0.8551	1.980	0.9690	-.9579E-05	-.1455E-04
0.2962E-01	-.9297E-05	0.8539	1.974	0.9685	-.3634E-05	-.5481E-05
0.3110E-01	0.1531E-05	0.8583	1.988	0.9629	0.5932E-06	0.9022E-06
0.3259E-01	0.1058E-04	0.8590	1.993	0.9615	0.4088E-05	0.6240E-05

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20I09.DAT

PROFILE TABULATION - INCLINED WIRE SURVEY IS VERTICAL
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = -.3810E-01)
X = -.5080E-01
Z = -.1270E-01
M ref = 2.790
U ref hw = 564.0
RHO ref hw = 0.8844
TAU wall preston = 141.7
P wall mean flow = 0.2174E+05

Y	(rhou)"v" RHO U**2	U Uref	M	Ps Pwall	(u"v") U**2	RHO(u"v") RHOref Uref**2
0.2000E-02	-.2856E-02	0.7608	1.588	1.078	-.1422E-02	-.4181E-03
0.3375E-02	-.2748E-02	0.7982	1.715	1.076	-.1262E-02	-.4323E-03
0.4809E-02	-.2769E-02	0.8293	1.826	1.072	-.1186E-02	-.4590E-03
0.6248E-02	-.2265E-02	0.8543	1.928	1.073	-.9107E-03	-.3932E-03
0.7689E-02	-.1916E-02	0.8752	2.016	1.066	-.7297E-03	-.3420E-03
0.9125E-02	-.2285E-02	0.8950	2.104	1.070	-.8247E-03	-.4227E-03
0.1058E-01	-.1840E-02	0.9095	2.174	1.075	-.6366E-03	-.3500E-03
0.1202E-01	-.2025E-02	0.9267	2.259	1.071	-.6659E-03	-.3937E-03
0.1347E-01	-.1868E-02	0.9417	2.337	1.067	-.5865E-03	-.3700E-03
0.1492E-01	-.1728E-02	0.9557	2.414	1.065	-.5190E-03	-.3484E-03
0.1636E-01	-.1357E-02	0.9675	2.483	1.069	-.3916E-03	-.2791E-03
0.1778E-01	-.6057E-03	0.9763	2.537	1.065	-.1695E-03	-.1256E-03
0.1922E-01	-.8496E-03	0.9900	2.624	1.066	-.2263E-03	-.1796E-03
0.2069E-01	-.4254E-03	0.9954	2.665	1.068	-.1107E-03	-.9091E-04
0.2215E-01	-.5987E-03	1.002	2.718	1.067	-.1513E-03	-.1291E-03
0.2361E-01	-.6946E-04	1.004	2.744	1.071	-.1732E-04	-.1510E-04
0.2507E-01	-.1763E-03	1.005	2.760	1.075	-.4356E-04	-.3860E-04
0.2655E-01	-.8803E-04	1.006	2.776	1.073	-.2156E-04	-.1929E-04
0.2802E-01	-.3526E-04	1.006	2.778	1.070	-.8629E-05	-.7706E-05
0.2945E-01	-.3067E-04	1.008	2.793	1.065	-.7442E-05	-.6693E-05
0.3093E-01	-.4370E-05					
0.3241E-01	0.4479E-05					
0.3387E-01	0.6312E-06					

********************ALPHA=20 DEGREES, NORMAL-WIRE SURVEYS********************

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20N01.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS VERTICAL
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = -.3810E-01)
X = -.5080E-01
Z = -.1270E-01
M ref = 2.790
U ref hw = 566.8
RHO ref hw = 0.8756
TAU wall preston = 141.7
P wall mean flow = 0.2174E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u"> **2 U**2	RHO<u">**2 RHOref Uref**2
0.2000E-02	0.1532	0.7608	1.588	1.078	0.6462E-02	0.1900E-02
0.3255E-02	0.1504	0.7964	1.709	1.076	0.5343E-02	0.1816E-02
0.4699E-02	0.1522	0.8272	1.819	1.073	0.4760E-02	0.1827E-02
0.6134E-02	0.1493	0.8529	1.922	1.073	0.4017E-02	0.1723E-02
0.7583E-02	0.1477	0.8733	2.008	1.067	0.3529E-02	0.1643E-02
0.9015E-02	0.1429	0.8944	2.101	1.069	0.2942E-02	0.1502E-02
0.1046E-01	0.1454	0.9081	2.167	1.076	0.2807E-02	0.1533E-02

0.1191E-01	0.1406	0.9253	2.252	1.071	0.2364E-02	0.1389E-02
0.1335E-01	0.1406	0.9403	2.330	1.068	0.2152E-02	0.1350E-02
0.1481E-01	0.1340	0.9550	2.409	1.065	0.1777E-02	0.1189E-02
0.1626E-01	0.1315	0.9670	2.480	1.070	0.1574E-02	0.1120E-02
0.1770E-01	0.1315	0.9759	2.534	1.065	0.1477E-02	0.1093E-02
0.1911E-01	0.1133	0.9892	2.618	1.065	0.9944E-03	0.7857E-03
0.2059E-01	0.1062	0.9950	2.662	1.069	0.8312E-03	0.6810E-03
0.2204E-01	0.8947E-01	1.001	2.716	1.067	0.5547E-03	0.4724E-03
0.2352E-01	0.7177E-01	1.004	2.743	1.070	0.3464E-03	0.3018E-03
0.2497E-01	0.6122E-01	1.005	2.759	1.075	0.2474E-03	0.2191E-03
0.2645E-01	0.4298E-01	1.006	2.775	1.074	0.1198E-03	0.1072E-03
0.2792E-01	0.3630E-01	1.005	2.776	1.070	0.8538E-04	0.7619E-04
0.2939E-01	0.2452E-01	1.008	2.793	1.066	0.3823E-04	0.3437E-04
0.3083E-01	0.1740E-01					
0.3231E-01	0.1756E-01					
0.3379E-01	0.1496E-01					
0.3526E-01	0.1355E-01					
0.3673E-01	0.1369E-01					
0.3821E-01	0.1339E-01					
0.3968E-01	0.1322E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20N02.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS VERTICAL
(MEAN FLOW SURVEY NORMAL TO TUNNEL FLOOR-VERTICAL. X = -.3810E-01)
X = -.5080E-01
Z = -.1270E-01
M ref = 2.790
U ref hw = 572.3
RHO ref hw = 0.8591
TAU wall preston = 141.7
P wall mean flow = 0.2174E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.2000E-02	0.1512	0.7608	1.588	1.078	0.6295E-02	0.1851E-02
0.3265E-02	0.1493	0.7965	1.709	1.076	0.5262E-02	0.1790E-02
0.4709E-02	0.1462	0.8274	1.819	1.073	0.4388E-02	0.1685E-02
0.6154E-02	0.1444	0.8531	1.923	1.073	0.3752E-02	0.1612E-02
0.7586E-02	0.1388	0.8734	2.008	1.067	0.3115E-02	0.1451E-02
0.9032E-02	0.1384	0.8945	2.101	1.069	0.2758E-02	0.1408E-02
0.1048E-01	0.1363	0.9083	2.168	1.076	0.2463E-02	0.1347E-02
0.1193E-01	0.1325	0.9256	2.254	1.071	0.2096E-02	0.1233E-02
0.1338E-01	0.1341	0.9407	2.332	1.068	0.1953E-02	0.1227E-02
0.1482E-01	0.1334	0.9551	2.410	1.065	0.1760E-02	0.1178E-02
0.1625E-01	0.1285	0.9670	2.480	1.070	0.1503E-02	0.1070E-02
0.1769E-01	0.1213	0.9759	2.534	1.065	0.1257E-02	0.9298E-03
0.1917E-01	0.1146	0.9896	2.621	1.065	0.1014E-02	0.8030E-03
0.2063E-01	0.1071	0.9952	2.663	1.069	0.8440E-03	0.6921E-03
0.2209E-01	0.9060E-01	1.002	2.717	1.067	0.5681E-03	0.4842E-03
0.2355E-01	0.7302E-01	1.004	2.743	1.070	0.3584E-03	0.3123E-03
0.2504E-01	0.6080E-01	1.005	2.760	1.075	0.2439E-03	0.2161E-03
0.2651E-01	0.4533E-01	1.006	2.775	1.073	0.1332E-03	0.1192E-03
0.2795E-01	0.3601E-01	1.005	2.777	1.070	0.8397E-04	0.7495E-04
0.2942E-01	0.2590E-01	1.008	2.793	1.066	0.4264E-04	0.3835E-04
0.3090E-01	0.1657E-01					
0.3237E-01	0.1437E-01					
0.3385E-01	0.1403E-01					
0.3532E-01	0.1282E-01					
0.3676E-01	0.1275E-01					
0.3824E-01	0.1214E-01					
0.3974E-01	0.1214E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20N03.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY IS 5.5 DEGREES OFF VERTICAL. X = .1111E-01)
X = -.6300E-02
Z = -.1270E-01
M ref = 2.790

U ref hw = 570.3
RHO ref hw = 0.8649
TAU wall preston = 17.02
P wall mean flow = 0.4161E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.3000E-02	0.3080	0.5675	1.079	1.028	0.4833E-01	0.1198E-01
0.4279E-02	0.3353	0.6656	1.328	0.9943	0.4278E-01	0.1554E-01
0.5713E-02	0.3208	0.7281	1.509	0.9450	0.3131E-01	0.1395E-01
0.7160E-02	0.2687	0.7747	1.658	0.8979	0.1818E-01	0.9298E-02
0.8601E-02	0.2104	0.8189	1.816	0.8029	0.9122E-02	0.5003E-02
0.1004E-01	0.1715	0.8613	1.983	0.7032	0.4910E-02	0.2811E-02
0.1147E-01	0.1686	0.8903	2.114	0.6493	0.4028E-02	0.2420E-02
0.1294E-01	0.1489	0.9139	2.225	0.6260	0.2741E-02	0.1759E-02
0.1438E-01	0.1340	0.9301	2.306	0.6131	0.2012E-02	0.1358E-02
0.1584E-01	0.1317	0.9466	2.400	0.6065	0.1735E-02	0.1255E-02
0.1728E-01	0.1291	0.9596	2.476	0.6036	0.1524E-02	0.1168E-02
0.1870E-01	0.1307	0.9692	2.532	0.6026	0.1462E-02	0.1170E-02
0.2015E-01	0.1189	0.9774	2.587	0.6026	0.1135E-02	0.9482E-03
0.2162E-01	0.1097	0.9868	2.654	0.6026	0.8949E-03	0.7866E-03
0.2308E-01	0.1001	0.9879	2.668	0.6026	0.7335E-03	0.6514E-03
0.2455E-01	0.9023E-01	0.9944	2.715	0.6021	0.5648E-03	0.5192E-03
0.2601E-01	0.7461E-01	0.9964	2.733	0.6024	0.3785E-03	0.3526E-03
0.2750E-01	0.5681E-01	0.9980	2.750	0.6029	0.2154E-03	0.2033E-03
0.2897E-01	0.4952E-01	0.9978	2.752	0.6036	0.1632E-03	0.1545E-03
0.3041E-01	0.3696E-01	0.9972	2.756	0.6048	0.9054E-04	0.8610E-04
0.3180E-01	0.3002E-01					
0.3329E-01	0.2470E-01					
0.3476E-01	0.1975E-01					
0.3624E-01	0.1472E-01					
0.3771E-01	0.1293E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20N04.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY IS 5.5 DEGREES OFF VERTICAL. X = 0.0000E+00)
X = 0.0000E+00
Z = -.1270E-01
M ref = 2.790
U ref hw = 564.2
RHO ref hw = 0.8839
TAU wall preston = 13.47
P wall mean flow = 0.4615E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.3000E-02	0.2473	0.2878	0.5026	0.9904	0.5219E-01	0.2999E-02
0.4238E-02	0.2859	0.4521	0.8223	0.9846	0.5428E-01	0.8299E-02
0.5673E-02	0.3743	0.5925	1.135	0.9842	0.6704E-01	0.1952E-01
0.7096E-02	0.3483	0.6756	1.351	0.9837	0.4493E-01	0.1852E-01
0.8549E-02	0.3480	0.7286	1.502	0.9697	0.3716E-01	0.1867E-01
0.9990E-02	0.2798	0.7813	1.671	0.9496	0.1941E-01	0.1182E-01
0.1143E-01	0.2260	0.8127	1.785	0.9308	0.1095E-01	0.7459E-02
0.1287E-01	0.1924	0.8375	1.880	0.9105	0.7041E-02	0.5201E-02
0.1432E-01	0.1805	0.8515	1.938	0.8589	0.5757E-02	0.4264E-02
0.1578E-01	0.1793	0.8891	2.099	0.7231	0.4640E-02	0.3396E-02
0.1722E-01	0.1511	0.9454	2.380	0.5811	0.2340E-02	0.1768E-02
0.1867E-01	0.1313					
0.2008E-01	0.1250					
0.2154E-01	0.1164					
0.2300E-01	0.1026					
0.2447E-01	0.9632E-01					
0.2593E-01	0.8441E-01					
0.2739E-01	0.6451E-01					
0.2889E-01	0.5427E-01					
0.3034E-01	0.3858E-01					
0.3180E-01	0.3007E-01					

0.3326E-01	0.2690E-01
0.3475E-01	0.1998E-01
0.3622E-01	0.1558E-01
0.3770E-01	0.1517E-01
0.3917E-01	0.1415E-01

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20N05.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY IS 5.5 DEGREES OFF VERTICAL. X = 0.3969E-02)
X = 0.3900E-02
Z = -.1270E-01
M ref = 2.790
U ref hw = 565.2
RHO ref hw = 0.8807
TAU wall preston = 11.24
P wall mean flow = 0.5073E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.2000E-02	0.2810	0.2090	0.3596	0.9560	0.7275E-01	0.2270E-02
0.3243E-02	0.3329	0.3660	0.6499	0.9588	0.8533E-01	0.8722E-02
0.4670E-02	0.3524	0.5136	0.9521	0.9545	0.7255E-01	0.1585E-01
0.6122E-02	0.3661	0.6230	1.211	0.9451	0.5874E-01	0.2054E-01
0.7565E-02	0.3120	0.6914	1.393	0.9356	0.3423E-01	0.1568E-01
0.9004E-02	0.2758	0.7460	1.556	0.9125	0.2182E-01	0.1216E-01
0.1044E-01	0.2161	0.7878	1.694	0.8867	0.1125E-01	0.7221E-02
0.1189E-01	0.1952	0.8306	1.850	0.8677	0.7524E-02	0.5640E-02
0.1335E-01	0.1798	0.8538	1.941	0.8416	0.5687E-02	0.4554E-02
0.1479E-01	0.1889	0.8629	1.977	0.8045	0.5999E-02	0.4763E-02
0.1624E-01	0.1641	0.8914	2.105	0.6890	0.3860E-02	0.2975E-02
0.1765E-01	0.1253	0.9418	2.361	0.5590	0.1647E-02	0.1295E-02
0.1912E-01	0.1148	0.9867	2.626	0.4689	0.1012E-02	0.8261E-03
0.2057E-01	0.1062					
0.2204E-01	0.9588E-01					
0.2351E-01	0.8031E-01					
0.2496E-01	0.6761E-01					
0.2645E-01	0.5093E-01					
0.2792E-01	0.4456E-01					
0.2937E-01	0.2581E-01					
0.3084E-01	0.2315E-01					
0.3232E-01	0.2175E-01					
0.3379E-01	0.1531E-01					
0.3527E-01	0.1479E-01					
0.3674E-01	0.1355E-01					
0.3819E-01	0.1317E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20N06.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY IS 5.5 DEGREES OFF VERTICAL. X = 0.1270E-01)
X = 0.1270E-01
Z = -.1270E-01
M ref = 2.790
U ref hw = 564.3
RHO ref hw = 0.8834
TAU wall preston = 45.80
P wall mean flow = 0.5830E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.2000E-02	0.3316	0.3846	0.6839	0.9600	0.8241E-01	0.1073E-01
0.3259E-02	0.3500	0.4789	0.8769	0.9407	0.7720E-01	0.1620E-01
0.4695E-02	0.3729	0.5672	1.075	0.9342	0.7117E-01	0.2230E-01
0.6136E-02	0.3855	0.6384	1.251	0.9300	0.6211E-01	0.2621E-01
0.7563E-02	0.3639	0.6947	1.407	0.9236	0.4574E-01	0.2427E-01
0.9023E-02	0.3097	0.7482	1.570	0.9155	0.2702E-01	0.1769E-01
0.1048E-01	0.2417	0.7927	1.717	0.9009	0.1366E-01	0.1052E-01

0.1192E-01	0.2015	0.8265	1.840	0.8836	0.8122E-02	0.7047E-02
0.1336E-01	0.1736	0.8637	1.986	0.8571	0.5012E-02	0.4915E-02
0.1478E-01	0.1683	0.9002	2.145	0.8046	0.3864E-02	0.4150E-02
0.1625E-01	0.1917	0.9421	2.358	0.6753	0.3865E-02	0.4211E-02
0.1770E-01	0.1380	0.9920	2.660	0.4745	0.1407E-02	0.1370E-02
0.1917E-01	0.9773E-01					
0.2063E-01	0.8413E-01					
0.2210E-01	0.6623E-01					
0.2359E-01	0.4605E-01					
0.2505E-01	0.3893E-01					
0.2649E-01	0.2999E-01					
0.2797E-01	0.2309E-01					
0.2945E-01	0.1771E-01					
0.3093E-01	0.1506E-01					
0.3240E-01	0.1399E-01					
0.3388E-01	0.1366E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20N07.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-20 DEG OFF VERTICAL. X = 0.2540E-01)

X	= 0.2540E-01
Z	= -.1270E-01
M ref	= 2.790
U ref hw	= 561.6
RHO ref hw	= 0.8919
TAU wall preston	= 98.22
P wall mean flow	= 0.6597E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.2000E-02	0.3189	0.4281	0.7680	0.9854	0.7096E-01	0.1354E-01
0.3242E-02	0.3242	0.4797	0.8770	0.9603	0.6623E-01	0.1606E-01
0.4692E-02	0.3613	0.5582	1.053	0.9444	0.6844E-01	0.2355E-01
0.6152E-02	0.3718	0.6305	1.231	0.9369	0.5912E-01	0.2757E-01
0.7592E-02	0.3573	0.6919	1.397	0.9326	0.4464E-01	0.2669E-01
0.9022E-02	0.3360	0.7444	1.554	0.9285	0.3246E-01	0.2389E-01
0.1045E-01	0.2949	0.7838	1.681	0.9247	0.2128E-01	0.1826E-01
0.1193E-01	0.2307	0.8302	1.847	0.9143	0.1055E-01	0.1080E-01
0.1338E-01	0.1955	0.8582	1.961	0.8982	0.6559E-02	0.7437E-02
0.1486E-01	0.1565	0.8868	2.083	0.8623	0.3609E-02	0.4431E-02
0.1631E-01	0.1314	0.9088	2.186	0.8048	0.2239E-02	0.2826E-02
0.1779E-01	0.1936	0.9049	2.180	0.6962	0.4895E-02	0.5317E-02
0.1924E-01	0.1770	0.9134	2.230	0.5471	0.3849E-02	0.3437E-02
0.2072E-01	0.4950E-01					
0.2218E-01	0.2916E-01					
0.2366E-01	0.2397E-01					
0.2512E-01	0.1579E-01					
0.2661E-01	0.1625E-01					
0.2807E-01	0.1347E-01					
0.2953E-01	0.1354E-01					
0.3102E-01	0.1423E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20N08.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-20 DEG OFF VERTICAL. X = 0.4128E-01)

X	= 0.4140E-01
Z	= -.1270E-01
M ref	= 2.790
U ref hw	= 564.6
RHO ref hw	= 0.8827
TAU wall preston	= 132.9
P wall mean flow	= 0.7209E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.2000E-02	0.2686	0.4633	0.8422	1.048	0.4702E-01	0.1253E-01
0.3290E-02	0.3058	0.5065	0.9374	1.015	0.5547E-01	0.1774E-01
0.4700E-02	0.3246	0.5557	1.049	0.9910	0.5551E-01	0.2172E-01
0.6180E-02	0.3611	0.6045	1.169	0.9753	0.5999E-01	0.2869E-01
0.7640E-02	0.3361	0.6716	1.344	0.9631	0.4217E-01	0.2632E-01
0.9100E-02	0.3451	0.7145	1.467	0.9556	0.3817E-01	0.2818E-01
0.1056E-01	0.3159	0.7691	1.639	0.9516	0.2576E-01	0.2362E-01
0.1204E-01	0.2614	0.8014	1.749	0.9495	0.1534E-01	0.1598E-01
0.1351E-01	0.2000	0.8411	1.894	0.9491	0.7470E-02	0.9123E-02
0.1497E-01	0.1527	0.8604	1.973	0.9418	0.3940E-02	0.5183E-02
0.1643E-01	0.1063	0.8852	2.086	0.9321	0.1659E-02	0.2413E-02
0.1790E-01	0.7177E-01	0.8917	2.125	0.9106	0.7200E-03	0.1062E-02
0.1938E-01	0.5600E-01	0.9044	2.191	0.8603	0.4042E-03	0.5988E-03
0.2086E-01	0.2140	0.9414	2.381	0.6824	0.4689E-02	0.6505E-02
0.2232E-01	0.1713	0.9739	2.575	0.4205	0.2389E-02	0.2390E-02
0.2379E-01	0.2960E-01					
0.2527E-01	0.1444E-01					
0.2676E-01	0.1336E-01					
0.2826E-01	0.1301E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20N09.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-20 DEG OFF VERTICAL. X = 0.4128E-01)

X	= 0.5710E-01
Z	= -.1270E-01
M ref	= 2.790
U ref hw	= 568.2
RHO ref hw	= 0.8713
TAU wall preston	= 179.6
P wall mean flow	= 0.7501E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.2000E-02	0.2369	0.4633	0.8422	1.048	0.3658E-01	0.1015E-01
0.3304E-02	0.2753	0.5072	0.9389	1.014	0.4488E-01	0.1498E-01
0.4756E-02	0.3057	0.5559	1.050	0.9901	0.4921E-01	0.2003E-01
0.6206E-02	0.3295	0.6051	1.171	0.9751	0.4986E-01	0.2487E-01
0.7656E-02	0.3401	0.6725	1.347	0.9631	0.4306E-01	0.2806E-01
0.9096E-02	0.3294	0.7144	1.467	0.9556	0.3480E-01	0.2671E-01
0.1053E-01	0.3178	0.7688	1.638	0.9516	0.2611E-01	0.2488E-01
0.1197E-01	0.2673	0.7998	1.744	0.9500	0.1615E-01	0.1741E-01
0.1345E-01	0.2007	0.8395	1.888	0.9492	0.7584E-02	0.9573E-02
0.1491E-01	0.1819	0.8601	1.972	0.9423	0.5602E-02	0.7660E-02
0.1637E-01	0.1219	0.8850	2.084	0.9327	0.2185E-02	0.3305E-02
0.1782E-01	0.6850E-01	0.8910	2.121	0.9125	0.6590E-03	0.1010E-02
0.1931E-01	0.4520E-01	0.9032	2.185	0.8653	0.2653E-03	0.4090E-03
0.2078E-01	0.2974E-01	0.9402	2.374	0.6968	0.9131E-04	0.1338E-03
0.2223E-01	0.2472E-01	0.9749	2.581	0.4345	0.4945E-04	0.5341E-04
0.2370E-01	0.3442E-01					
0.2517E-01	0.2491					
0.2665E-01	0.8621E-01					
0.2811E-01	0.1359E-01					
0.2960E-01	0.1330E-01					
0.3105E-01	0.1249E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20N10.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-20 DEG OFF VERTICAL. X = 0.7620E-01)

X	= 0.7620E-01
Z	= -.1270E-01
M ref	= 2.790
U ref hw	= 567.7
RHO ref hw	= 0.8728
TAU wall preston	= 224.3
P wall mean flow	= 0 7715E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.2000E-02	0.2332	0.5547	1.047	0.9841	0.2871E-01	0.1189E-01
0.3360E-02	0.2570	0.5800	1.107	0.9655	0.3262E-01	0.1482E-01
0.4790E-02	0.2949	0.6054	1.172	0.9505	0.3987E-01	0.1999E-01
0.6270E-02	0.3004	0.6352	1.250	0.9377	0.3774E-01	0.2123E-01
0.7710E-02	0.3204	0.6737	1.356	0.9296	0.3779E-01	0.2478E-01
0.9200E-02	0.3207	0.7109	1.462	0.9244	0.3318E-01	0.2518E-01
0.1065E-01	0.3239	0.7521	1.590	0.9250	0.2882E-01	0.2587E-01
0.1213E-01	0.2976	0.7836	1.694	0.9236	0.2132E-01	0.2169E-01
0.1360E-01	0.2602	0.8185	1.817	0.9288	0.1394E-01	0.1641E-01
0.1506E-01	0.2090	0.8523	1.946	0.9336	0.7635E-02	0.1037E-01
0.1652E-01	0.1458	0.8659	2.005	0.9371	0.3453E-02	0.4992E-02
0.1800E-01	0.1042	0.8752	2.053	0.9401	0.1661E-02	0.2526E-02
0.1946E-01	0.7523E-01	0.8764	2.066	0.9408	0.8515E-03	0.1313E-02
0.2094E-01	0.3918E-01	0.8755	2.066	0.9414	0.2310E-03	0.3563E-03
0.2241E-01	0.2757E-01	0.8735	2.058	0.9404	0.1155E-03	0.1766E-03
0.2388E-01	0.2140E-01	0.8729	2.058	0.9365	0.6959E-04	0.1060E-03
0.2535E-01	0.2057E-01	0.8717	2.051	0.9328	0.6486E-04	0.9771E-04
0.2685E-01	0.2045E-01	0.8707	2.044	0.9312	0.6467E-04	0.9659E-04
0.2835E-01	0.2049E-01	0.8709	2.044	0.9311	0.6492E-04	0.9696E-04
0.2981E-01	0.6411E-01	0.8717	2.053	0.9158	0.6288E-03	0.9315E-03
0.3132E-01	0.1967	0.9236	2.298	0.7054	0.4376E-02	0.6258E-02
0.3281E-01	0.1423E-01					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC20N11.DAT

PROFILE TABULATION - NORMAL WIRE SURVEY IS NORMAL TO THE RAMP SURFACE
(MEAN FLOW SURVEY NORMAL TO RAMP SURFACE-20 DEG OFF VERTICAL. X = 0.1143)

```
X                    = 0.9520E-01
Z                    = -.1270E-01
M ref                =  2.790
U   ref hw           =  568.9
RHO ref hw           = 0.8692
TAU wall preston     =  255.0
P wall mean flow     = 0.7874E+05
```

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.2000E-02	0.2378	0.6143	1.187	0.9874	0.2549E-01	0.1389E-01
0.3410E-02	0.2629	0.6406	1.256	0.9674	0.2871E-01	0.1716E-01
0.4880E-02	0.2711	0.6672	1.330	0.9570	0.2793E-01	0.1851E-01
0.6360E-02	0.2777	0.6811	1.371	0.9465	0.2787E-01	0.1942E-01
0.7830E-02	0.3008	0.7046	1.439	0.9415	0.3004E-01	0.2295E-01
0.9280E-02	0.3113	0.7356	1.538	0.9395	0.2841E-01	0.2475E-01
0.1075E-01	0.3023	0.7482	1.575	0.9396	0.2558E-01	0.2336E-01
0.1222E-01	0.3032	0.7922	1.722	0.9396	0.2136E-01	0.2331E-01
0.1370E-01	0.2478	0.8137	1.801	0.9422	0.1290E-01	0.1545E-01
0.1517E-01	0.2299	0.8322	1.872	0.9482	0.1015E-01	0.1321E-01
0.1665E-01	0.1754	0.8485	1.937	0.9515	0.5443E-02	0.7612E-02
0.1811E-01	0.1251	0.8612	1.988	0.9514	0.2596E-02	0.3824E-02
0.1961E-01	0.9930E-01	0.8617	1.995	0.9584	0.1621E-02	0.2423E-02
0.2111E-01	0.5720E-01	0.8646	2.005	0.9628	0.5311E-03	0.8056E-03
0.2257E-01	0.3752E-01	0.8604	1.995	0.9725	0.2314E-03	0.3510E-03
0.2408E-01	0.2498E-01	0.8589	1.988	0.9747	0.1035E-03	0.1562E-03
0.2557E-01	0.1814E-01	0.8578	1.983	0.9740	0.5493E-04	0.8243E-04
0.2705E-01	0.1956E-01	0.8555	1.981	0.9736	0.6403E-04	0.9584E-04
0.2856E-01	0.1814E-01	0.8539	1.975	0.9679	0.5545E-04	0.8206E-04
0.3006E-01	0.1865E-01	0.8548	1.977	0.9675	0.5848E-04	0.8667E-04
0.3155E-01	0.1898E-01	0.8586	1.988	0.9634	0.5976E-04	0.8914E-04
0.3308E-01	0.1870E-01	0.8586	1.995	0.9595	0.5750E-04	0.8603E-04
0.3459E-01	0.1805E-01	0.8564	1.988	0.9561	0.5401E-04	0.8000E-04
0.3610E-01	0.7494E-01	0.8582	1.995	0.9501	0.9234E-03	0.1368E-02
0.3762E-01	0.1421	0.8577	1.995	0.9474	0.3320E-02	0.4905E-02
0.3915E-01	0.1459E-01	0.8590	1.998	0.9407	0.3488E-04	0.5131E-04

********************ALPHA=24 DEGREES, NORMAL-WIRE SURVEYS********************

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC24N01.DAT

PROFILE TABULATION - NORMAL WIRE IS 24 DEGREES OFF VERTICAL, NORMAL TO RAMP SURFACE
(MEAN SURVEY 24 DEGREES OFF VERTICAL-NORMAL TO RAMP SURFACE. X = 0.3048E-01)

```
X                    = 0.3048E-01
Z                    = 0.0000E+00
M ref                =  2.840
U   ref hw           =  575.0
RHO ref hw           = 0.8058
TAU wall preston     =
P wall mean flow     = 0.7288E+05
```

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.2286E-02	0.3035	0.2511	0.4364	1.035	0.8168E-01	0.6168E-02
0.3333E-02	0.2988	0.2836	0.4970	1.022	0.7645E-01	0.7394E-02
0.4950E-02	0.3338	0.3626	0.6482	1.004	0.8590E-01	0.1387E-01
0.6569E-02	0.3680	0.4632	0.8525	0.9814	0.8739E-01	0.2388E-01
0.8151E-02	0.4004	0.5403	1.024	0.9659	0.8677E-01	0.3368E-01
0.9756E-02	0.4414	0.6220	1.224	0.9502	0.8410E-01	0.4582E-01
0.1136E-01	0.4575	0.6900	1.407	0.9281	0.7236E-01	0.5090E-01
0.1297E-01	0.4503	0.7581	1.611	0.9098	0.5421E-01	0.4905E-01
0.1456E-01	0.3965	0.8124	1.798	0.8855	0.3314E-01	0.3636E-01
0.1618E-01	0.3577	0.8540	1.960	0.8563	0.2199E-01	0.2770E-01
0.1776E-01	0.2602	0.8884	2.105	0.8234	0.9699E-02	0.1356E-01
0.1936E-01	0.1983	0.9081	2.200	0.7878	0.5015E-02	0.7321E-02
0.2088E-01	0.1785	0.9212	2.266	0.7538	0.3747E-02	0.5554E-02
0.2242E-01	0.9528E-01	0.9248	2.298	0.7255	0.1027E-02	0.1507E-02
0.2402E-01	0.8191E-01	0.9268	2.320	0.7025	0.7389E-03	0.1070E-02
0.2554E-01	0.5430E-01	0.9241	2.320	0.6895	0.3247E-03	0.4616E-03
0.2711E-01	0.7809E-01	0.9077	2.246	0.6741	0.7348E-03	0.9570E-03
0.2875E-01	0.1869	0.9282	2.354	0.4631	0.3692E-02	0.3629E-02
0.3033E-01	0.1561	0.9838	2.683	0.3217	0.1753E-02	0.1555E-02
0.3194E-01	0.9666E-01					
0.3354E-01	0.2253E-01					
0.3515E-01	0.9735E-02					
0.3676E-01	0.9559E-02					
0.3836E-01	0.9755E-02					
0.3994E-01	0.9924E-02					
0.4154E-01	0.9894E-02					

AGARDOGRAPH 315 DATA TAPE FILE: NEWCC24N02.DAT

PROFILE TABULATION - NORMAL WIRE IS 24 DEGREES OFF VERTICAL, NORMAL TO RAMP SURFACE
(MEAN SURVEY 24 DEGREES OFF VERTICAL-NORMAL TO RAMP SURFACE. X = 0.6096E-01)

```
X                    = 0.6096E-01
Z                    = 0.0000E+00
M ref                =  2.840
U   ref hw           =  577.7
RHO ref hw           = 0.8074
TAU wall preston     =
P wall mean flow     = 0.8638E+05
```

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.2286E-02	0.2084	0.4709	0.8608	1.002	0.2780E-01	0.9267E-02
0.3673E-02	0.2300	0.4970	0.9198	0.9852	0.3195E-01	0.1195E-01
0.5212E-02	0.2623	0.5358	1.009	0.9690	0.3786E-01	0.1676E-01
0.6812E-02	0.3222	0.5780	1.109	0.9562	0.5113E-01	0.2701E-01
0.8416E-02	0.3591	0.6208	1.218	0.9473	0.5603E-01	0.3534E-01
0.1004E-01	0.3867	0.6786	1.375	0.9420	0.5378E-01	0.4296E-01
0.1165E-01	0.4065	0.7206	1.496	0.9348	0.5109E-01	0.4798E-01
0.1326E-01	0.3914	0.7673	1.641	0.9289	0.3944E-01	0.4428E-01
0.1484E-01	0.3538	0.8016	1.759	0.9265	0.2773E-01	0.3569E-01
0.1646E-01	0.2880	0.8330	1.876	0.9201	0.1584E-01	0.2303E-01
0.1806E-01	0.2420	0.8565	1.969	0.9107	0.9955E-02	0.1577E-01

0.1964E-01	0.1682	0.8695	2.027	0.8933	0.4469E-02	0.7361E-02
0.2124E-01	0.1151	0.8816	2.082	0.8715	0.1953E-02	0.3312E-02
0.2281E-01	0.5938E-01	0.8865	2.120	0.8462	0.4963E-03	0.8467E-03
0.2436E-01	0.5124E-01	0.8926	2.160	0.8106	0.3517E-03	0.5967E-03
0.2589E-01	0.3805E-01	0.9013	2.207	0.7700	0.1829E-03	0.3079E-03
0.2739E-01	0.4258E-01	0.9143	2.279	0.7181	0.2098E-03	0.3512E-03
0.2890E-01	0.5146E-01	0.9348	2.388	0.6481	0.2688E-03	0.4458E-03
0.3056E-01	0.5687E-01	0.9725	2.618	0.5338	0.2508E-03	0.4116E-03
0.3222E-01	0.1165	1.043	3.147	0.3575	0.5893E-03	0.9364E-03
0.3381E-01	0.2456	1.070	3.420	0.2650	0.1985E-02	0.2762E-02
0.3541E-01	0.1085					
0.3702E-01	0.3739E-01					
0.3860E-01	0.1253E-01					
0.4017E-01	0.1229E-01					

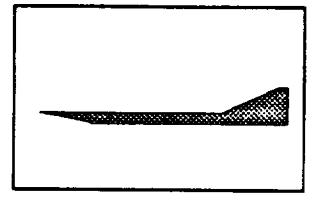
AGARDOGRAPH 315 DATA TAPE FILE: NEWCC24N03.DAT

PROFILE TABULATION - NORMAL WIRE IS 24 DEGREES OFF VERTICAL, NORMAL TO RAMP SURFACE
(MEAN SURVEY 24 DEGREES OFF VERTICAL-NORMAL TO RAMP SURFACE. X = 0.1016)

X	= 0.9144E-01
Z	= 0.0000E+00
M ref	= 2.840
U ref hw	= 575.8
RHO ref hw	= 0.8028
TAU wall preston	=
P wall mean flow	= 0.9264E+05

Y	<(rhou)"> RHOU	U Uref	M	Ps Pwall	<u">**2 U**2	RHO<u">**2 RHOref Uref**2
0.2286E-02	0.2087	0.5591	1.070	1.023	0.2243E-01	0.1279E-01
0.3693E-02	0.2339	0.5857	1.134	1.013	0.2620E-01	0.1663E-01
0.5226E-02	0.2640	0.6110	1.200	1.004	0.3094E-01	0.2179E-01
0.6828E-02	0.3080	0.6521	1.309	0.9945	0.3697E-01	0.3069E-01
0.8429E-02	0.3414	0.6919	1.419	0.9875	0.3967E-01	0.3844E-01
0.1004E-01	0.3504	0.7306	1.535	0.9827	0.3614E-01	0.4079E-01
0.1168E-01	0.3542	0.7690	1.659	0.9779	0.3159E-01	0.4141E-01
0.1326E-01	0.3522	0.7962	1.750	0.9749	0.2782E-01	0.4046E-01
0.1487E-01	0.3402	0.8162	1.827	0.9749	0.2354E-01	0.3731E-01
0.1646E-01	0.2826	0.8290	1.880	0.9749	0.1519E-01	0.2549E-01
0.1807E-01	0.2462	0.8354	1.910	0.9749	0.1109E-01	0.1922E-01
0.1969E-01	0.1806	0.8378	1.923	0.9749	0.5874E-02	0.1031E-01
0.2129E-01	0.1437	0.8343	1.917	0.9735	0.3746E-02	0.6529E-02
0.2284E-01	0.9043E-01	0.8342	1.917	0.9705	0.1483E-02	0.2578E-02
0.2448E-01	0.5891E-01	0.8332	1.917	0.9641	0.6295E-03	0.1087E-02
0.2603E-01	0.4230E-01	0.8333	1.917	0.9583	0.3246E-03	0.5569E-03
0.2757E-01	0.3627E-01	0.8311	1.910	0.9540	0.2408E-03	0.4083E-03
0.2911E-01	0.3023E-01	0.8303	1.907	0.9543	0.1678E-03	0.2838E-03
0.3077E-01	0.3050E-01	0.8266	1.894	0.9551	0.1737E-03	0.2900E-03
0.3240E-01	0.3411E-01	0.8241	1.882	0.9478	0.2206E-03	0.3609E-03
0.3397E-01	0.3309E-01	0.8205	1.868	0.9368	0.2114E-03	0.3366E-03
0.3556E-01	0.3444E-01	0.8258	1.889	0.9131	0.2229E-03	0.3539E-03
0.3717E-01	0.4533E-01	0.8406	1.946	0.8568	0.3592E-03	0.5680E-03
0.3874E-01	0.2814	0.8845	2.141	0.6990	0.1086E-01	0.1695E-01
0.4033E-01	0.1084	0.8890	2.163	0.4266	0.1567E-02	0.1524E-02
0.4192E-01	0.2783E-01	0.9304	2.382	0.3091	0.7917E-04	0.6766E-04
0.4351E-01	0.1008E-01	0.9797	2.682	0.2471	0.7319E-05	0.6339E-05
0.4512E-01	0.9567E-02					

Ref.: 103, private communication
Author: Zheltovodov, A. A., *et al*
Geometry: 2-D Compression Corner
Mach number: 3
Data: p_{wall}, c_h, mean and fluctuating flowfield surveys (pitot and hot-wire anemometry)



Zheltovodov, A.A., Zaylichny, E.G., Trofimov, V.M. and Yakovlev, V.N., "Investigation of Heat Transfer and Turbulence in Supersonic Separation," *ITPM Preprint 22-87*, 1987.

Zheltovodov, A.A., Trofimov, V.M., Shilein, E.H. and Yakovlev, V.N., "An Experimental Documentation of Supersonic Turbulent Flows in the Vicinity of Forward- and Backward-Facing Ramps," *Unpublished Report* of the Inst. of Theoretical and Applied Mechanics, Siberian Division, USSR Academy of Sciences, April 1990.

The data consist of surface measurements and mean-flow and fluctuation profiles for a variety of wedge-compression and wedge-expansion corners. While the latter are interesting and useful data not previously available in the West, only the former match our present interest in shock/boundary-layer interactions. The tabulated data are clearly the result of an extensive, careful, detailed research program.

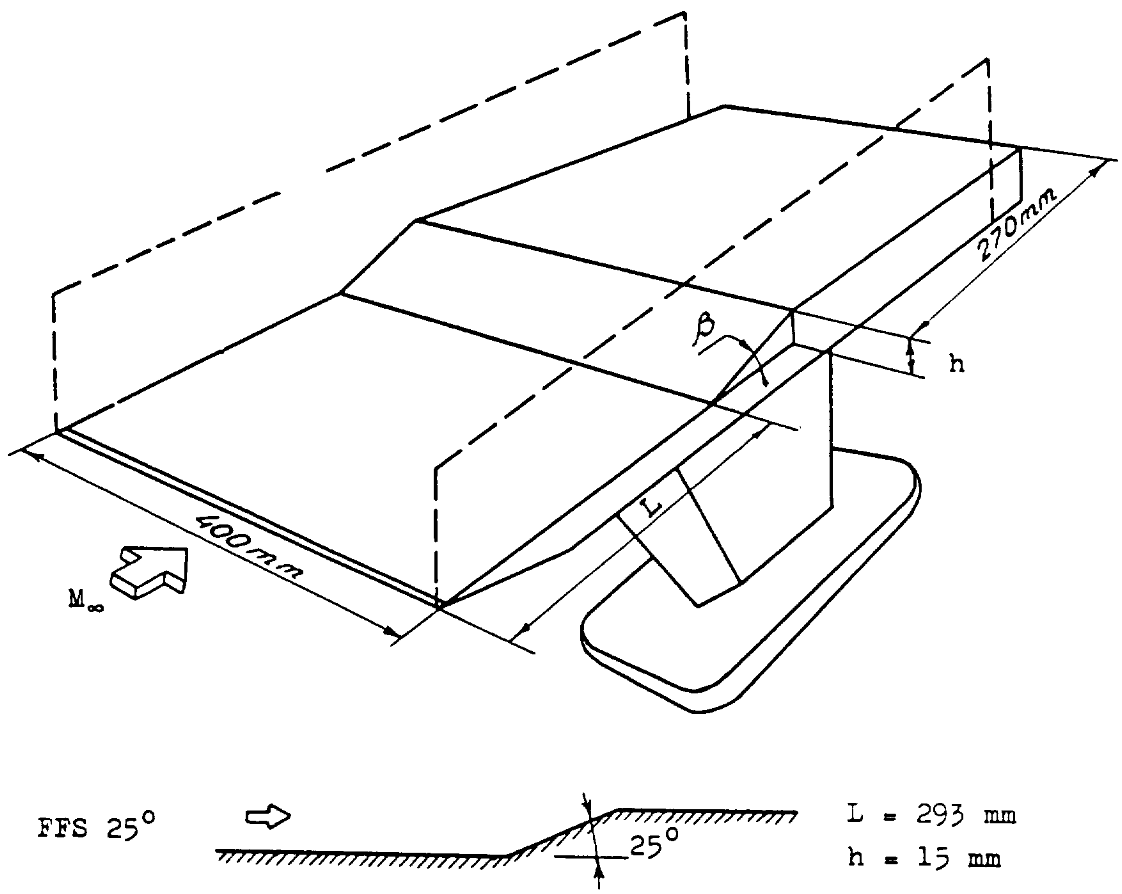
Compression corners of 8, 25, 45, and 90 degrees angle were tested at about Mach 2, 3, and 4. Of these test conditions, however, not all mean, turbulence, and heat transfer measurements were made for each condition represented. Only the 25 degree compression corner (designated FFS25) at Mach 3 includes all three types of data. For purposes of turbulence modeling this case is thus of most interest, since it provides far more detailed data than are available for the 24 degree ramp of Smits *et al.* The 25 degree case is the only one tabulated here.

The data were actually taken in three different wind tunnel facilities. Thus, three sets of incoming conditions and boundary-layer profiles are given in the tabulated data. Note that, in the case of the hot-wire measurements, the boundary-layer on the flat plate was tripped near its leading edge. In all cases the cited x-coordinates are measured from an origin at the compression corner along the surface of the test model, whether horizontal or sloped. Similarly, y-coordinates have their origin at the model surface are are vertical in all cases (see model drawings reproduced below).

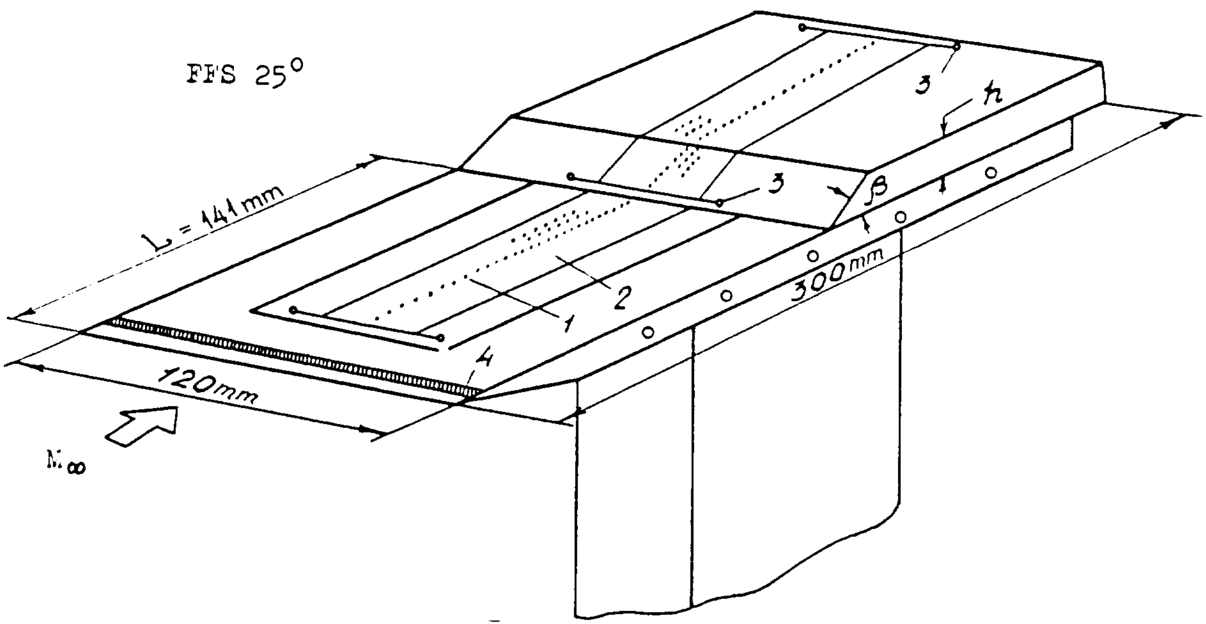
Confidence limits cited by the experimenters for these data are as follows. The mean-flow profiles have a maximum error of ± 30% in the vicinity of shock waves, but better than this elsewhere. The constant-current hot-wire-anemometer turbulence data are subject to several possible errors and are not meant to give the impression of high accuracy, but are given confidence limits of ± 35% to a maximum of ± 50% in regions of peak fluctuation intensity. The heat transfer data are repeatable to ± 5% and are believed accurate to ± 15% near flow reattachment and ± 10% elsewhere.

Since the background material on this experiment is unavailable to the research community in the West we have attempted to provide sufficiently thorough coverage of the 25 degree ramp case to make such material unnecessary. Nonetheless it is hoped that the unpublished report listed above, which is written in English and is nearly 300 pages long, will eventually be made formally available. The content of this report is far broader than our present scope allows for inclusion in this Report. In the interim, informal copies of some or all of this material may be obtained through direct contact with personnel of the Penn State Gas Dynamics Laboratory.

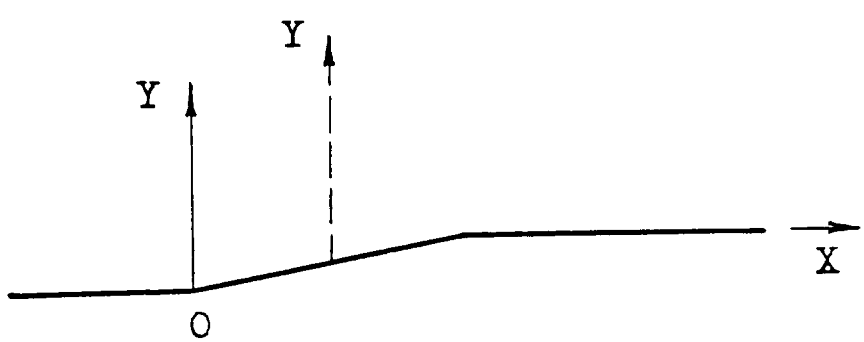
The nomenclature of the tabulated data should be self-explanatory for the most part. The designation "inf" refers to wind tunnel freestream conditions, "1" refers to local incoming conditions ahead of the interaction, and "e" refers to conditions at the boundary-layer edge. The term "P0" is used in some tables to represent pitot pressure. Bracketed terms such as <u> and <m> represent rms values of velocity and mass-flux fluctuations. Heat transfer coefficients are denoted by α, and Tw and Trw denote actual wall temperature and adiabatic wall temperature, respectively.

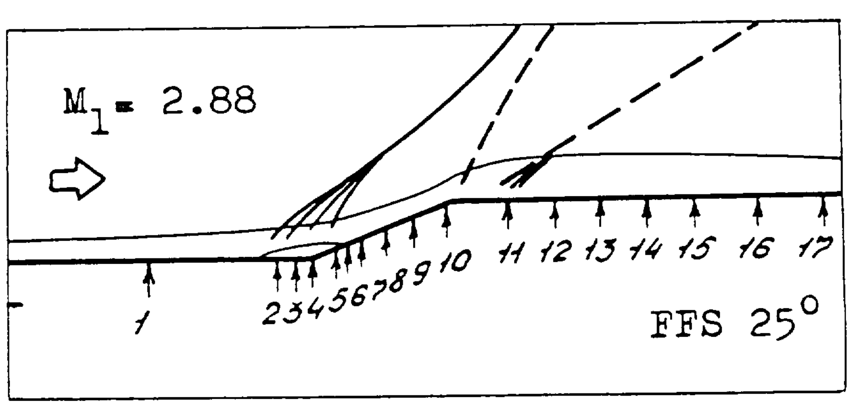


Test Geometry for Mean-Flow Measurements

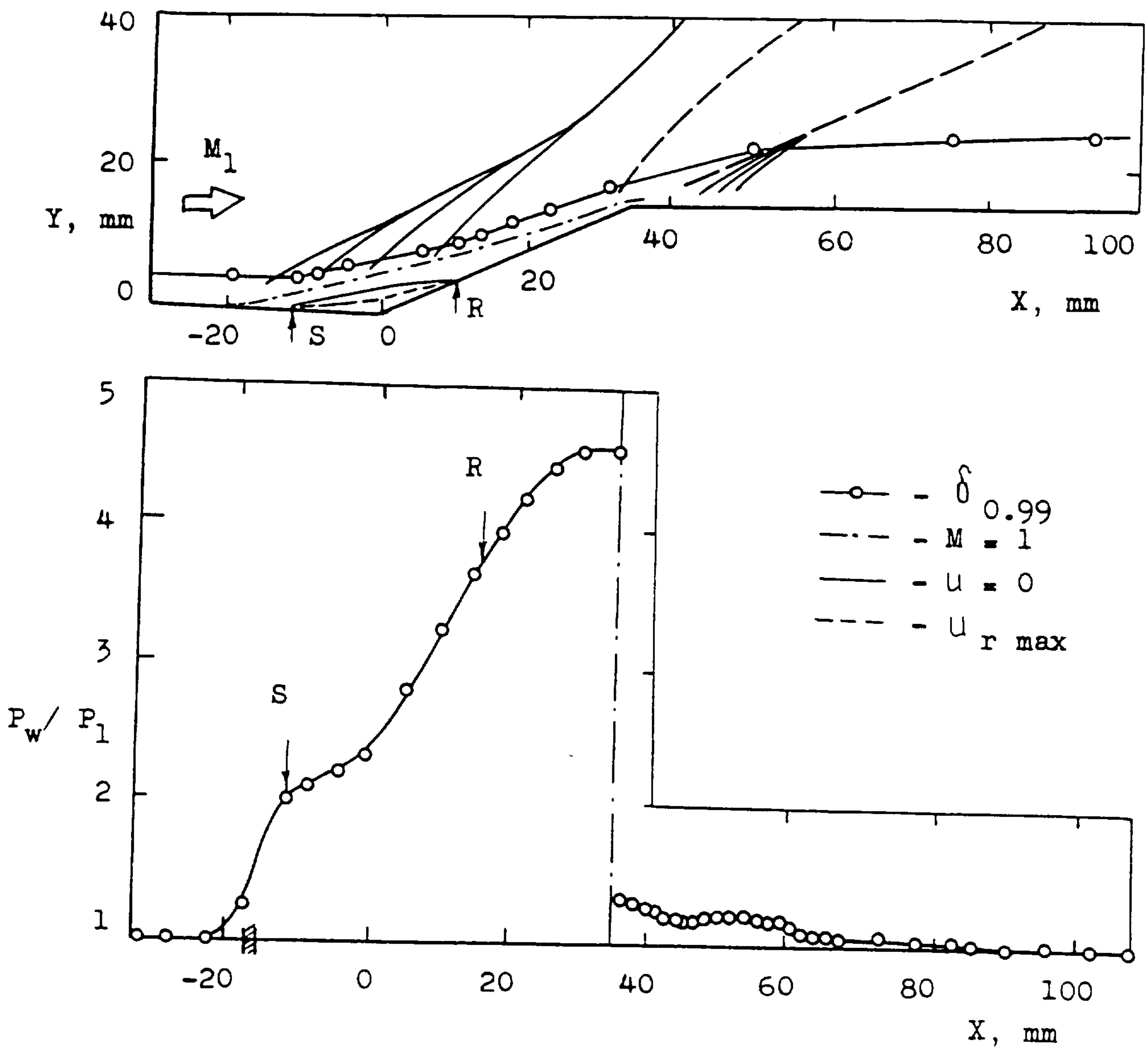


Test Geometry for Heat Transfer Measurements

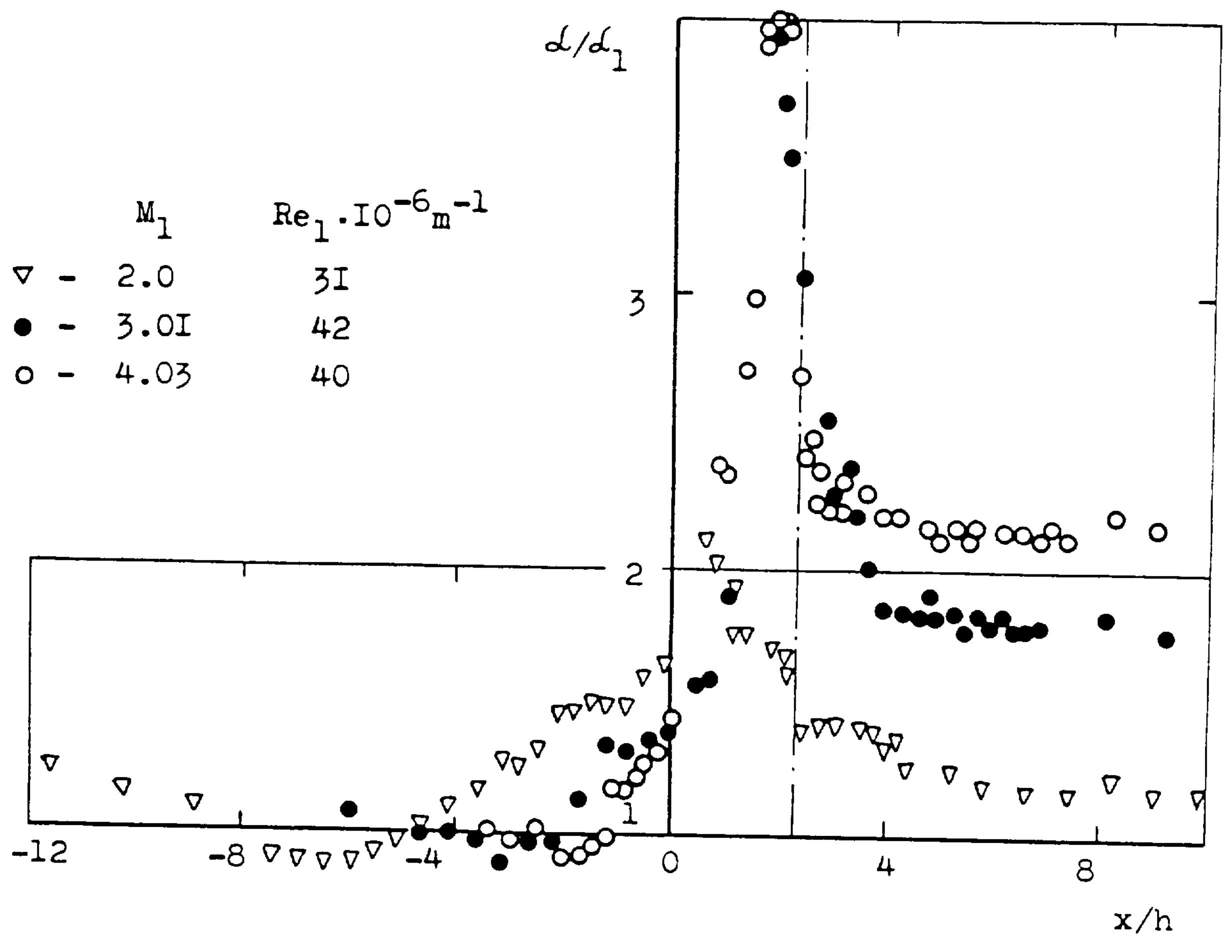




Coordinate Scheme and Survey Locations



Flow field schematic, FFS 25°, M_1 = 2.88



Heat Transfer Distributions for FFS25 Model at 3 Mach Numbers

**************************I. Mean Flow Data**********************************

*****Nominal Freestream Conditions in Wind Tunnel T 313 for FFS25 Tests********

Minf = 3.01 +/- 0.003
Pinf = 0.112 +/- 0.001 kg/cm**2
Pstagnation = 4.223 +/- 0.15 kg/cm**2
Re/m = (32.4 +/- 1.6)E+06
Tstagnation = 294 +/- 12 K

*****************Incoming Flow Parameters for FFS25 Tests********************

M1 = 2.88
P1 = 0.122 kg/cm**2
Delta = 4.10 mm
Delta* = 1.43 mm
Theta = 0.30 mm
Cf1 = 1.47E-03

*************Locations of Survey Coordinates for FFS25 Tests*****************

Section #	x (cm)
1	-3.30
2	-1.20
3	-0.80
4	-0.50
5	0.50
6	1.10
7	1.25
8	1.70
9	2.35
10	3.10
11	5.00
12	6.25
13	7.85
14	9.85
15	11.70
16	13.60
17	15.05

*********************SURFACE PRESSURES FFS25*******************************

M1 = 2.80, P1 = 0.1224 kG/cm²

X(cm)	P/P1	X(cm)	P/P1
- 7.85	0.975	4.10	1.287
- 7.05	0.959	4.20	1.265
- 6.65	0.972	4.30	1.255
- 6.25	0.982	4.40	1.266
- 5.85	0.988	4.50	1.223
- 5.45	0.989	4.60	1.225
- 5.05	1.022	4.80	1.225
- 3.45	0.997	5.00	1.204
- 2.65	1.007	5.20	1.216
- 2.25	0.998	5.40	1.181
- 1.85	1.222	5.60	1.173
- 1.05	2.077	5.80	1.150
- 0.60	2.171	6.00	1.145
- 0.20	2.304	6.20	1.119
0.45	2.806	6.40	1.097
0.85	3.205	6.60	1.094
1.25	3.595	7.10	1.043
1.65	3.895	7.60	1.105
2.05	4.162	8.10	1.007
2.45	4.381	8.60	1.013
2.85	4.500	9.10	1.019
3.25	4.520	9.60	1.022
3.70	1.315	10.10	1.006
3.80	1.331	10.60	1.003
3.90	1.294	11.10	1.015
4.00	1.330	11.60	0.974

*******************Static Pressure Profiles, FFS25**************************

M1 = 2.88, P1 = 0.1224 kg/cm**2

SECTION 2		SECTION 4		SECTION 6	
Y (cm)	P/P1	Y (cm)	P/P1	Y (cm)	P/P1
0.043	1.964	0.150	2.208	0.150	3.052
0.063	1.960	0.190	2.221	0.180	3.072
0.093	2.010	0.230	2.224	0.220	3.056
0.113	1.989	0.270	2.223	0.260	3.044
0.133	1.985	0.310	2.220	0.300	3.023
0.153	1.958	0.350	2.221	0.340	3.030
0.163	1.946	0.390	2.212	0.380	3.031
0.173	1.942	0.430	2.215	0.420	3.025
0.193	1.873	0.470	2.199	0.460	3.025
0.213	1.794	0.510	2.182	0.500	3.024
0.243	1.721	0.550	2.154	0.540	2.987
0.273	1.671	0.590	2.097	0.580	2.944
0.303	1.619	0.630	2.047	0.620	2.895
0.333	1.587	0.670	2.016	0.660	2.835
0.363	1.555	0.710	2.002	0.700	2.746
0.393	1.520	0.750	1.997	0.740	2.640
0.423	1.471	0.790	1.977	0.780	2.538
0.453	1.415	0.830	1.916	0.820	2.467
0.483	1.361	0.870	1.842	0.860	2.387
0.513	1.296	0.910	1.736	0.910	2.301
0.553	1.254	0.950	1.645		
0.593	1.190	0.990	1.463		
		1.030	1.310		
		1.070	1.149		
		1.110	0.938		

SECTION 8		SECTION 11	
Y (cm)	P/P1	Y (cm)	P/P1
0.043	3.965	0.043	1.215
0.093	3.887	0.093	1.200
0.143	3.828	0.113	1.193
0.193	3.810	0.143	1.194
0.243	3.788	0.193	1.185
0.293	3.793	0.243	1.179
0.343	3.780	0.293	1.174
0.393	3.773	0.343	1.198
0.443	3.733	0.393	1.205
0.493	3.676	0.443	1.182
0.543	3.612	0.503	1.158
0.593	3.534	0.563	1.141
0.633	3.447	0.623	1.130
		0.683	1.154
		0.743	1.201
		0.803	1.266
		0.863	1.344
		0.943	1.470
		1.023	1.065
		1.103	1.744
		1.183	1.867
		1.263	1.977

*******************Mean Flowfield Profiles FFS25****************************

FFS25, M1 = 2.88, SECTION 1

X = -3.30 cm, Me = 2.88, Pw = 0.122 kG/cm²,
Ue = 618.1 m/s, Te = 114.8 K, RHOe = 0.0376 kG s²/m

Y (cm)	PO (kG/cm²)	P (kG/cm²)	M	T/Te	U/Ue	RHO/RHOe
0.00	0.122	0.122	0.00	2.474	0.000	0.404
0.01	0.221	0.122	0.96	2.126	0.486	0.470

0.03	0.354	0.122	1.35	1.866	0.642	0.536
0.05	0.468	0.123	1.60	1.698	0.725	0.589
0.06	0.499	0.123	1.66	1.658	0.744	0.603
0.07	0.530	0.122	1.72	1.618	0.762	0.618
0.08	0.554	0.123	1.77	1.591	0.774	0.628
0.11	0.619	0.123	1.88	1.520	0.805	0.658
0.14	0.672	0.123	1.96	1.466	0.827	0.682
0.17	0.743	0.123	2.08	1.399	0.854	0.715
0.20	0.816	0.123	2.18	1.338	0.878	0.747
0.23	0.894	0.123	2.29	1.278	0.901	0.782
0.26	0.973	0.123	2.40	1.220	0.922	0.819
0.29	1.051	0.123	2.50	1.171	0.940	0.854
0.33	1.161	0.123	2.63	1.107	0.963	0.904
0.37	1.252	0.124	2.74	1.059	0.980	0.944
0.41	1.315	0.124	2.80	1.030	0.990	0.970
0.45	1.346	0.124	2.85	1.013	0.996	0.987
0.49	1.360	0.124	2.86	1.008	0.997	0.992
0.52	1.367	0.124	2.86	1.005	0.998	0.995
0.55	1.360	0.124	2.86	1.009	0.997	0.991
0.58	1.372	0.124	2.87	1.004	0.999	0.996
0.61	1.377	0.124	2.87	1.002	0.999	0.998
0.64	1.382	0.124	2.88	1.000	1.000	1.000

FFS25°, M1 = 2.88, SECTION 2

X = -1.20 cm, Me = 2.35, Pw = 0.247 kG/cm²,
Ue = 555.2 m/s, Te = 139.1 K, RHOe = 0.0456 kG s²/m

Y [cm]	PO [kG/cm²]	P [kG/cm²]	M	T/Te	U/Ue	RHO/RHOe
0.00	0.247	0.247	0.00	1.615	0.000	0.589
0.01	0.257	0.247	0.24	1.681	0.158	0.595
0.02	0.247	0.247	0.00	-	0.000	-
0.03	0.252	0.247	0.16	1.972	0.097	0.507
0.05	0.257	0.247	0.24	1.961	0.145	0.510
0.07	0.283	0.247	0.45	1.913	0.264	0.523
0.09	0.314	0.247	0.60	1.863	0.347	0.537
0.11	0.396	0.247	0.85	1.756	0.479	0.569
0.13	0.428	0.247	0.92	1.722	0.515	0.581
0.14	0.538	0.218	1.22	1.566	0.650	0.638
0.19	0.721	0.212	1.50	1.417	0.759	0.706
0.22	0.828	0.220	1.59	1.367	0.791	0.732
0.25	0.954	0.211	1.77	1.273	0.849	0.785
0.28	1.039	0.204	1.89	1.212	0.886	0.825
0.31	1.163	0.199	2.04	1.139	0.927	0.878
0.34	1.220	0.195	2.12	1.102	0.946	0.907
0.37	1.270	0.192	2.18	1.073	0.962	0.932
0.40	1.380	0.188	2.31	1.017	0.991	0.983
0.43	1.380	0.182	2.35	1.000	1.000	1.000

FFS25°, M1 = 2.88, SECTION 3

X = -0.80 cm, Me = 2.24, Pw = 0.266 kG/cm²,
Ue = 543.0 m/s, Te = 146.9 K, RHOe = 0.0631 kG s²/m

Y [cm]	PO [kG/cm²]	P [kG/cm²]	M	T/Te	U/Ue	RHO/RHOe
0.00	0.266	0.266	0.00	1.783	0.000	0.589
0.01	0.275	0.266	0.22	1.871	0.135	0.534
0.02	0.278	0.266	0.25	1.867	0.153	0.536
0.03	0.278	0.266	0.25	1.866	0.153	0.536
0.04	0.280	0.266	0.27	1.862	0.167	0.537
0.06	0.281	0.266	0.28	1.860	0.173	0.537
0.08	0.279	0.266	0.26	1.865	0.158	0.536
0.12	0.266	0.266	0.00	-	0.000	-
0.15	0.303	0.266	0.44	1.827	0.264	0.547
0.18	0.357	0.266	0.66	1.752	0.393	0.571
0.21	0.396	0.266	0.78	1.706	0.454	0.586
0.24	0.458	0.266	0.92	1.643	0.526	0.609
0.27	0.588	0.266	1.13	1.539	0.627	0.650

0.30	0.708	0.266	1.28	1.461	0.694	0.685
0.33	0.779	0.266	1.36	1.418	0.728	0.705
0.36	0.942	0.266	1.53	1.331	0.792	0.751
0.39	1.088	0.266	1.67	1.263	0.839	0.792
0.42	1.270	0.266	1.82	1.187	0.889	0.843
0.45	1.426	0.266	1.94	1.129	0.925	0.886
0.48	1.595	0.266	2.07	1.072	0.958	0.933
0.51	1.716	0.266	2.15	1.035	0.980	0.966
0.54	1.816	0.266	2.22	1.006	0.996	0.994
0.57	1.839	0.266	2.24	1.000	1.000	1.000

FFS25°, M1 = 2.88, SECTION 4

X = -0.50 cm, Me = 2.25, Pw = 0.277 kG/cm²,
Ue = 545.9 m/s, Te = 146.1 K, RHOe = 0.0661 kG s²/m

Y [cm]	PO [kG/cm²]	P [kG/cm²]	M	T/Te	U/Ue	RHO/RHOe
0.00	0.277	0.277	0.00	1.796	0.000	0.526
0.01	0.291	0.277	0.27	1.877	0.164	0.533
0.03	0.293	0.277	0.29	1.874	0.175	0.534
0.05	0.300	0.277	0.34	1.864	0.204	0.536
0.07	0.298	0.277	0.32	1.867	0.196	0.536
0.09	0.295	0.277	0.30	1.872	0.181	0.534
0.11	0.277	0.277	0.00	-	0.000	-
0.23	0.339	0.277	0.54	1.808	0.325	0.553
0.27	0.399	0.277	0.74	1.734	0.434	0.577
0.31	0.437	0.277	0.84	1.694	0.482	0.590
0.36	0.606	0.277	1.12	1.556	0.621	0.643
0.41	0.750	0.277	1.30	1.464	0.697	0.683
0.45	0.999	0.277	1.55	1.334	0.794	0.750
0.49	1.190	0.277	1.72	1.249	0.851	0.801
0.52	1.324	0.277	1.82	1.196	0.885	0.836
0.55	1.458	0.277	1.92	1.147	0.915	0.872
0.58	1.647	0.277	2.06	1.085	0.952	0.922
0.61	1.773	0.277	2.14	1.047	0.974	0.955
0.64	1.878	0.277	2.21	1.018	0.990	0.982
0.67	1.924	0.277	2.24	1.005	0.997	0.995
0.70	1.945	0.277	2.25	1.000	1.000	1.000
0.73	1.945	0.277	2.25	1.000	1.000	1.000

FFS25°, M1 = 2.88, SECTION 5

X = 0.50 cm, Me = 2.00, Pw = 0.364 kG/cm²,
Ue = 512.1 m/s, Te = 163.0 K, RHOe = 0.0737 kG s²/m

Y [cm]	PO [kG/cm²]	P [kG/cm²]	M	T/Te	U/Ue	RHO/RHOe
0.00	0.364	0.364	0.00	1.587	0.000	0.601
0.01	0.383	0.364	0.27	1.645	0.177	0.608
0.03	0.390	0.364	0.31	1.637	0.207	0.611
0.05	0.393	0.364	0.33	1.634	0.218	0.612
0.07	0.397	0.364	0.35	1.630	0.232	0.614
0.08	0.395	0.364	0.34	1.632	0.225	0.613
0.09	0.396	0.364	0.34	1.631	0.229	0.613
0.10	0.394	0.364	0.34	1.633	0.223	0.613
0.12	0.391	0.364	0.32	1.636	0.210	0.611
0.15	0.379	0.364	0.24	1.649	0.160	0.607
0.18	0.364	0.364	0.00	-	0.000	-
0.26	0.422	0.340	0.46	1.620	0.367	0.620
0.29	0.449	0.340	0.57	1.596	0.415	0.638
0.32	0.507	0.339	0.71	1.547	0.495	0.657
0.35	0.658	0.340	0.82	1.509	0.545	0.681
0.38	0.637	0.342	0.94	1.459	0.608	0.707
0.42	0.755	0.339	1.07	1.397	0.682	0.749
0.46	0.909	0.341	1.23	1.327	0.753	0.787
0.50	1.070	0.341	1.37	1.264	0.814	0.857
0.54	1.349	0.342	1.58	1.169	0.897	0.929
0.58	1.649	0.343	1.78	1.083	0.966	0.947
0.61	1.727	0.343	1.83	1.062	0.982	0.992

0.64	1.841	0.344	1.95	1.010	0.999	0.999
0.67	1.941	0.345	2.00	1.000	1.000	1.000

FFS25°,M1 = 2.88, SECTION 6

X = 1.10 cm, Me = 1.93, Pw = 0.407 kG/cm^2,
Ue = 498.0 m/s, Te = 166.0 K, RHOe = 0.0757 kG s^2/m

Y (cm)	PO (kG/cm^2)	P (kG/cm^2)	M	T/Te	U/Ue	RHO/RHOe
0.00	0.407	0.407	0.00	1.662	0.000	0.602
0.07	0.415	0.407	0.16	1.654	0.110	0.605
0.09	0.423	0.390	0.34	1.628	0.227	0.614
0.11	0.427	0.388	0.37	1.621	0.247	0.617
0.13	0.430	0.388	0.39	1.618	0.256	0.618
0.16	0.452	0.387	0.48	1.597	0.312	0.626
0.19	0.525	0.385	0.68	1.536	0.437	0.651
0.22	0.579	0.384	0.79	1.496	0.500	0.668
0.28	0.690	0.381	0.96	1.427	0.596	0.701
0.32	0.710	0.379	0.99	1.414	0.612	0.707
0.36	0.822	0.376	1.12	1.358	0.677	0.736
0.40	1.042	0.374	1.32	1.267	0.772	0.789
0.44	1.298	0.372	1.52	1.177	0.856	0.850
0.48	1.616	0.370	1.73	1.082	0.936	0.924
0.52	1.861	0.367	1.88	1.018	0.986	0.982
0.56	1.904	0.361	1.93	1.000	1.000	1.000

FFS25°,M1 = 2.88, SECTION 7

X = 1.25 cm, Me = 1.78, Pw = 0.448 kG/cm^2,
Ue = 477.0 m/s, Te = 178.0 K, RHOe = 0.0816 kG s^2/m

Y (cm)	PO (kG/cm^2)	P (kG/cm^2)	M	T/Te	U/Ue	RHO/RHOe
0.00	0.448	0.448	0.00	1.566	0.000	0.638
0.01	0.466	0.448	0.24	1.550	0.169	0.645
0.03	0.502	0.446	0.42	1.519	0.288	0.658
0.04	0.494	0.446	0.38	1.526	0.266	0.655
0.06	0.524	0.444	0.49	1.501	0.339	0.666
0.08	0.532	0.442	0.52	1.494	0.356	0.669
0.10	0.569	0.441	0.61	1.468	0.417	0.681
0.12	0.580	0.441	0.64	1.460	0.432	0.685
0.14	0.577	0.439	0.64	1.461	0.431	0.684
0.16	0.567	0.438	0.62	1.466	0.421	0.682
0.20	0.626	0.437	0.74	1.428	0.494	0.700
0.24	0.760	0.434	0.93	1.357	0.608	0.737
0.27	0.874	0.432	1.06	1.307	0.677	0.765
0.30	0.952	0.430	1.13	1.276	0.716	0.784
0.33	1.069	0.428	1.23	1.234	0.766	0.811
0.36	1.236	0.426	1.36	1.179	0.826	0.848
0.39	1.399	0.423	1.47	1.131	0.877	0.884
0.42	1.527	0.423	1.55	1.097	0.911	0.912
0.45	1.743	0.419	1.68	1.040	0.964	0.961
0.48	1.914	0.417	1.78	1.000	1.000	1.000

FFS25°,M1 = 2.88, SECTION 8

X = 1.70 cm, Me = 1.63, Pw = 0.483 kG/cm^2,
Ue = 446.5 m/s, Te = 187.9 K, RHOe = 0.0893 kG s^2/m

Y (cm)	PO (kG/cm^2)	P (kG/cm^2)	M	T/Te	U/Ue	RHO/RHOe
0.00	0.483	0.483	0.00	1.470	0.000	0.680
0.01	0.636	0.483	0.64	1.370	0.462	0.730
0.03	0.664	0.480	0.70	1.354	0.498	0.739
0.04	0.694	0.485	0.73	1.341	0.523	0.746
0.05	0.714	0.483	0.77	1.330	0.545	0.752
0.07	0.742	0.484	0.81	1.318	0.570	0.759
0.09	0.747	0.481	0.82	1.314	0.577	0.761
0.11	0.806	0.484	0.88	1.290	0.619	0.775
0.14	0.821	0.483	0.90	1.283	0.630	0.779
0.17	0.873	0.485	0.96	1.264	0.662	0.791
0.20	0.954	0.485	1.03	1.235	0.706	0.809
0.23	1.010	0.486	1.08	1.218	0.732	0.821
0.26	1.099	0.484	1.15	1.190	0.772	0.841
0.30	1.221	0.485	1.24	1.155	0.819	0.866
0.34	1.507	0.486	1.41	1.084	0.906	0.922
0.38	1.608	0.487	1.47	1.061	0.932	0.942
0.42	1.826	0.486	1.59	1.015	0.984	0.986
0.46	1.882	0.485	1.62	1.003	0.997	0.997
0.50	1.882	0.487	1.62	1.004	0.996	0.996
0.54	1.881	0.486	1.62	1.004	0.996	0.996
0.58	1.882	0.486	1.62	1.003	0.997	0.997
0.62	1.881	0.481	1.62	1.000	1.000	1.000

FFS25°,M1 = 2.88, SECTION 9

X = 2.35 cm, Me = 1.56, Pw = 0.518 kG/cm^2,
Ue = 436.0 m/s, Te = 194.5 K, RHOe = 0.0935 kG s^2/m

Y (cm)	PO (kG/cm^2)	P (kG/cm^2)	M	T/Te	U/Ue	RHO/RHOe
0.00	0.518	0.518	0.00	1.433	0.000	0.698
0.01	0.716	0.518	0.70	1.319	0.512	0.758
0.03	0.811	0.519	0.82	1.278	0.598	0.782
0.05	0.876	0.519	0.90	1.253	0.645	0.798
0.06	0.879	0.517	0.90	1.250	0.649	0.800
0.07	0.869	0.517	0.89	1.254	0.642	0.797
0.08	0.927	0.518	0.95	1.234	0.678	0.810
0.09	0.950	0.519	0.97	1.227	0.690	0.815
0.10	0.976	0.518	1.00	1.218	0.705	0.821
0.12	0.981	0.517	1.00	1.215	0.709	0.823
0.14	1.099	0.519	1.09	1.181	0.762	0.847
0.16	1.093	0.520	1.09	1.183	0.759	0.845
0.18	1.168	0.520	1.14	1.162	0.790	0.860
0.20	1.215	0.520	1.18	1.150	0.808	0.870
0.22	1.288	0.519	1.22	1.131	0.835	0.884
0.25	1.365	0.520	1.27	1.113	0.860	0.899
0.28	1.385	0.520	1.28	1.108	0.867	0.903
0.32	1.770	0.520	1.50	1.024	0.972	0.976
0.35	1.794	0.519	1.51	1.019	0.978	0.982
0.38	1.881	0.520	1.55	1.002	0.997	0.998
0.41	1.901	0.520	1.56	0.999	1.002	1.001
0.44	1.902	0.520	1.56	0.999	1.002	1.001
0.47	1.902	0.522	1.56	1.000	1.000	1.000

FFS25°,M1 = 2.88, SECTION 10

X = 3.15 cm, Me = 1.49, Pw = 0.570 kG/cm^2,
Ue = 422.3 m/s, Te = 200.4 K, RHOe = 0.0982 kG s^2/m

Y (cm)	PO (kG/cm^2)	P (kG/cm^2)	M	T/Te	U/Ue	RHO/RHOe
0.00	0.570	0.570	0.00	1.394	0.000	0.717
0.01	0.884	0.570	0.82	1.246	0.613	0.802
0.04	0.968	0.569	0.90	1.217	0.671	0.822
0.06	1.046	0.569	0.97	1.193	0.715	0.838
0.07	1.081	0.569	1.00	1.182	0.733	0.846
0.08	1.106	0.568	1.02	1.175	0.746	0.851
0.09	1.126	0.570	1.04	1.171	0.753	0.854
0.11	1.172	0.569	1.07	1.158	0.775	0.864
0.13	1.184	0.567	1.08	1.154	0.781	0.867
0.15	1.202	0.566	1.10	1.149	0.789	0.870
0.18	1.248	0.567	1.13	1.137	0.807	0.879
0.21	1.328	0.566	1.18	1.118	0.837	0.894
0.24	1.394	0.566	1.22	1.103	0.860	0.907
0.25	1.521	0.566	1.29	1.075	0.900	0.930
0.31	1.599	0.565	1.34	1.058	0.923	0.945
0.35	1.753	0.566	1.41	1.028	0.964	0.972

0.39	1.858	0.566	1.46	1.009	0.989	0.991
0.43	1.903	0.565	1.49	1.000	1.000	1.000
0.48	1.903	0.565	1.49	1.000	1.000	1.000

FFS25°,M1 = 2.88, SECTION 11

X = 5.00 cm, Me = 2.61, Pw = 0.150 kG/cm²,
Ue = 579.7 m/s, Te = 122.5 K, RHOe = 0.0429 kG s²/m .

Y [cm]	PO [kG/cm²]	P [kG/cm²]	M	T/Te	U/Ue	RHO/RHOe
0.00	0.150	0.150	0.00	2.215	0.000	0.451
0.01	0.318	0.150	1.10	1.824	0.568	0.548
0.03	0.696	0.150	1.79	1.410	0.814	0.709
0.06	0.817	0.150	1.96	1.316	0.860	0.760
0.07	0.829	0.151	1.97	1.309	0.864	0.764
0.08	0.838	0.150	1.99	1.301	0.867	0.769
0.09	0.854	0.150	2.01	1.289	0.873	0.776
0.10	0.869	0.150	2.03	1.280	0.877	0.781
0.11	0.891	0.150	2.06	1.264	0.885	0.791
0.13	0.912	0.150	2.08	1.251	0.891	0.800
0.15	0.936	0.151	2.11	1.236	0.898	0.809
0.18	0.968	0.151	2.15	1.217	0.906	0.822
0.21	0.969	0.150	2.16	1.211	0.909	0.826
0.25	1.004	0.150	2.19	1.193	0.917	0.838
0.29	1.011	0.151	2.20	1.191	0.918	0.840
0.33	1.053	0.150	2.25	1.164	0.930	0.859
0.39	1.088	0.151	2.29	1.148	0.937	0.872
0.45	1.137	0.150	2.35	1.119	0.950	0.894
0.51	1.160	0.151	2.37	1.109	0.954	0.902
0.57	1.202	0.150	2.42	1.086	0.964	0.920
0.63	1.228	0.150	2.45	1.072	0.970	0.933
0.69	1.246	0.150	2.46	1.064	0.973	0.939
0.75	1.296	0.151	2.51	1.043	0.982	0.958
0.77	1.320	0.151	2.54	1.033	0.986	0.968
0.80	1.338	0.150	2.56	1.024	0.990	0.976
0.84	1.398	0.151	2.61	1.000	1.000	1.000

FFS25°,M1 = 2.88, SECTION 12

X = 6.25 cm, Me = 2.71, Pw = 0.143 kG/cm²,
Ue = 590.2 m/s, Te = 118.2 K, RHOe = 0.0423 kG s²/m

Y [cm]	PO [kG/cm²]	P [kG/cm²]	M	T/Te	U/Ue	RHO/RHOe
0.00	0.143	0.143	0.00	2.306	0.000	0.434
0.01	0.278	0.143	1.02	1.945	0.526	0.514
0.03	0.319	0.144	1.13	1.877	0.573	0.533
0.04	0.531	0.144	1.57	1.600	0.735	0.625
0.05	0.630	0.144	1.74	1.499	0.786	0.667
0.07	0.721	0.143	1.88	1.417	0.825	0.706
0.09	0.746	0.144	1.91	1.398	0.834	0.715
0.11	0.769	0.144	1.94	1.379	0.843	0.725
0.13	0.789	0.144	1.97	1.364	0.850	0.733
0.15	0.819	0.144	2.01	1.339	0.860	0.747
0.19	0.853	0.144	2.06	1.315	0.871	0.760
0.23	0.875	0.143	2.09	1.298	0.879	0.771
0.25	0.888	0.143	2.11	1.288	0.883	0.776
0.30	0.911	0.143	2.14	1.273	0.889	0.786
0.35	0.941	0.143	2.17	1.252	0.898	0.799
0.40	0.971	0.143	2.21	1.233	0.906	0.811
0.46	1.009	0.143	2.26	1.210	0.916	0.827
0.52	1.051	0.143	2.31	1.184	0.927	0.845
0.58	1.093	0.143	2.36	1.160	0.937	0.862
0.64	1.144	0.144	2.41	1.133	0.948	0.882
0.70	1.198	0.144	2.47	1.105	0.959	0.905
0.76	1.248	0.143	2.53	1.079	0.969	0.927
0.82	1.295	0.144	2.58	1.058	0.978	0.946

0.88	1.350	0.144	2.63	1.032	0.988	0.969
0.92	1.371	0.144	2.65	1.024	0.991	0.977
0.96	1.398	0.144	2.68	1.011	0.996	0.989
1.00	1.425	0.144	2.71	1.000	1.000	1.000

FFS25°,M1 = 2.88, SECTION 13

X = 7.85 cm, Me = 2.78, Pw = 0.133 kG/cm²,
Ue = 602.1 m/s, Te = 116.6 K, RHOe = 0.0402 kG s²/m

Y [cm]	PO [kG/cm²]	P [kG/cm²]	M	T/Te	U/Ue	RHO/RHOe
0.00	0.133	0.133	0.00	2.377	0.000	0.421
0.01	0.247	0.133	0.98	2.028	0.503	0.493
0.03	0.422	0.133	1.43	1.740	0.680	0.575
0.04	0.546	0.134	1.67	1.590	0.756	0.629
0.05	0.585	0.134	1.74	1.547	0.776	0.646
0.06	0.634	0.134	1.82	1.497	0.800	0.668
0.07	0.652	0.134	1.84	1.480	0.807	0.676
0.09	0.689	0.134	1.90	1.446	0.822	0.691
0.11	0.710	0.134	1.94	1.426	0.831	0.702
0.13	0.740	0.134	1.98	1.400	0.842	0.714
0.15	0.760	0.134	2.01	1.383	0.850	0.723
0.18	0.784	0.134	2.04	1.364	0.858	0.733
0.21	0.806	0.134	2.07	1.346	0.865	0.743
0.25	0.835	0.134	2.12	1.323	0.875	0.756
0.29	0.860	0.134	2.15	1.304	0.883	0.767
0.34	0.871	0.134	2.16	1.297	0.886	0.771
0.39	0.907	0.134	2.21	1.271	0.896	0.787
0.45	0.937	0.134	2.25	1.250	0.905	0.800
0.52	0.969	0.134	2.29	1.229	0.913	0.813
0.59	1.013	0.134	2.34	1.202	0.924	0.832
0.66	1.066	0.134	2.41	1.169	0.937	0.856
0.73	1.113	0.134	2.46	1.142	0.947	0.876
0.80	1.172	0.134	2.53	1.110	0.959	0.901
0.87	1.222	0.134	2.59	1.084	0.969	0.923
0.94	1.270	0.134	2.64	1.060	0.978	0.943
1.00	1.314	0.134	2.69	1.039	0.986	0.962
1.04	1.333	0.134	2.71	1.030	0.989	0.971
1.08	1.366	0.134	2.74	1.015	0.994	0.985
1.11	1.373	0.134	2.75	1.012	0.996	0.988
1.14	1.376	0.134	2.75	1.012	0.996	0.988
1.17	1.399	0.134	2.78	1.002	0.999	0.998
1.20	1.405	0.135	2.78	1.000	1.000	1.000

FFS25°,M1 = 2.88, SECTION 14

X = 9.85 cm, Me = 2.80, Pw = 0.127 kG/cm²,
Ue = 598.2 m/s, Te = 113.7 K, RHOe = 0.0392 kG s²/m

Y [cm]	PO [kG/cm²]	P [kG/cm²]	M	T/Te	U/Ue	RHO/RHOe
0.00	0.127	0.127	0.00	2.395	0.000	0.418
0.01	0.240	0.127	1.00	2.034	0.508	0.492
0.03	0.354	0.126	1.33	1.824	0.640	0.548
0.04	0.432	0.126	1.50	1.707	0.702	0.586
0.05	0.513	0.127	1.66	1.607	0.752	0.622
0.06	0.575	0.126	1.77	1.535	0.785	0.651
0.07	0.611	0.126	1.84	1.494	0.804	0.669
0.08	0.631	0.126	1.87	1.475	0.812	0.678
0.09	0.651	0.126	1.90	1.456	0.821	0.687
0.11	0.682	0.126	1.95	1.427	0.833	0.701
0.13	0.707	0.127	1.98	1.408	0.841	0.710
0.15	0.732	0.126	2.03	1.381	0.852	0.724
0.18	0.767	0.127	2.08	1.353	0.864	0.739
0.21	0.785	0.127	2.10	1.340	0.870	0.746
0.25	0.810	0.127	2.14	1.319	0.878	0.758
0.29	0.833	0.127	2.18	1.300	0.886	0.769

0.35	0.860	0.126	2.22	1.278	0.895	0.782
0.41	0.887	0.126	2.25	1.258	0.903	0.795
0.47	0.916	0.127	2.29	1.238	0.911	0.808
0.53	0.949	0.127	2.33	1.216	0.919	0.822
0.59	0.973	0.127	2.36	1.201	0.925	0.832
0.65	1.006	0.127	2.41	1.179	0.934	0.848
0.71	1.035	0.127	2.44	1.162	0.940	0.861
0.78	1.089	0.127	2.51	1.128	0.953	0.886
0.85	1.146	0.127	2.58	1.097	0.964	0.911
0.92	1.197	0.127	2.63	1.072	0.974	0.933
0.96	1.233	0.127	2.68	1.051	0.981	0.951
1.00	1.257	0.127	2.70	1.041	0.985	0.961
1.04	1.287	0.127	2.74	1.025	0.991	0.975
1.07	1.305	0.127	2.76	1.017	0.994	0.984
1.10	1.315	0.127	2.77	1.012	0.996	0.988
1.13	1.334	0.127	2.79	1.002	0.999	0.998
1.16	1.352	0.128	2.80	1.000	1.000	1.000

FFS25°,M1 = 2.88, SECTION 15

X = 11.70 cm, Me = 2.86, Pw = 0.121 kG/cm²,
Ue = 608.1 m/s, Te = 112.7 K, RHOe = 0.0379 k s²/m

Y [cm]	PO [kG/cm²]	P [kG/cm²]	M	T/Te	U/Ue	RHO/RHOe
0.00	0.121	0.121	0.00	2.453	0.000	0.407
0.01	0.229	0.121	1.00	2.085	0.503	0.480
0.03	0.320	0.121	1.28	1.901	0.616	0.526
0.05	0.486	0.121	1.65	1.655	0.741	0.604
0.06	0.500	0.121	1.68	1.635	0.750	0.612
0.07	0.539	0.121	1.75	1.589	0.771	0.629
0.08	0.566	0.122	1.80	1.559	0.784	0.641
0.09	0.591	0.121	1.84	1.529	0.798	0.654
0.11	0.624	0.122	1.90	1.496	0.812	0.669
0.13	0.656	0.122	1.95	1.464	0.825	0.683
0.15	0.690	0.122	2.01	1.429	0.839	0.700
0.17	0.715	0.122	2.05	1.405	0.850	0.712
0.21	0.753	0.122	2.10	1.371	0.863	0.729
0.25	0.785	0.122	2.15	1.344	0.874	0.744
0.31	0.818	0.122	2.20	1.318	0.884	0.759
0.37	0.853	0.122	2.25	1.291	0.894	0.775
0.43	0.881	0.122	2.29	1.268	0.903	0.789
0.50	0.915	0.122	2.34	1.245	0.912	0.803
0.57	0.951	0.122	2.38	1.220	0.921	0.819
0.64	0.987	0.122	2.43	1.196	0.930	0.836
0.71	1.028	0.122	2.48	1.170	0.940	0.854
0.78	1.078	0.122	2.55	1.138	0.951	0.879
0.85	1.132	0.122	2.61	1.107	0.963	0.904
0.92	1.183	0.122	2.68	1.079	0.972	0.927
0.98	1.227	0.122	2.73	1.056	0.981	0.947
1.04	1.269	0.123	2.77	1.037	0.987	0.964
1.07	1.290	0.122	2.80	1.026	0.991	0.975
1.10	1.304	0.122	2.81	1.020	0.993	0.981
1.13	1.319	0.122	2.83	1.012	0.996	0.988
1.16	1.329	0.123	2.84	1.008	0.997	0.992
1.19	1.348	0.123	2.86	1.000	1.000	1.000

FFS25°,M1 = 2.88, SECTION 16

X = 13.60 cm, Me = 2.86, Pw = 0.122 kG/cm²,
Ue = 609.2 m/s, Te = 113.1 K, RHOe = 0.0383 kG s²/m

Y [cm]	PO [kG/cm²]	P [kG/cm²]	M	T/Te	U/Ue	RHO/RHOe
0.00	0.122	0.122	0.00	2.453	0.000	0.408
0.01	0.232	0.122	1.00	2.082	0.505	0.480
0.03	0.343	0.123	1.32	1.870	0.633	0.535
0.05	0.429	0.123	1.52	1.739	0.701	0.575
0.06	0.492	0.123	1.65	1.654	0.742	0.605
0.08	0.560	0.123	1.77	1.572	0.778	0.636
0.10	0.598	0.124	1.84	1.532	0.796	0.653
0.12	0.637	0.123	1.90	1.490	0.814	0.671
0.14	0.670	0.123	1.96	1.457	0.828	0.686
0.17	0.715	0.124	2.03	1.417	0.844	0.706
0.20	0.753	0.124	2.09	1.382	0.859	0.724
0.24	0.795	0.124	2.15	1.347	0.872	0.742
0.28	0.827	0.124	2.19	1.322	0.882	0.756
0.32	0.847	0.124	2.22	1.306	0.889	0.766
0.36	0.879	0.124	2.26	1.282	0.898	0.780
0.41	0.900	0.124	2.29	1.266	0.904	0.790
0.47	0.932	0.124	2.34	1.242	0.913	0.805
0.53	0.955	0.124	2.37	1.227	0.918	0.815
0.59	0.984	0.124	2.41	1.207	0.926	0.829
0.65	1.017	0.124	2.45	1.187	0.933	0.842
0.71	1.054	0.124	2.49	1.164	0.942	0.859
0.77	1.089	0.124	2.54	1.142	0.950	0.876
0.83	1.132	0.124	2.59	1.118	0.959	0.895
0.89	1.173	0.124	2.64	1.094	0.967	0.914
0.95	1.210	0.124	2.68	1.075	0.974	0.930
0.98	1.229	0.124	2.70	1.066	0.977	0.938
1.01	1.259	0.124	2.74	1.050	0.982	0.952
1.04	1.277	0.124	2.76	1.041	0.986	0.960
1.07	1.299	0.124	2.78	1.031	0.989	0.969
1.10	1.316	0.124	2.80	1.022	0.992	0.978
1.13	1.335	0.124	2.83	1.012	0.996	0.988
1.16	1.342	0.124	2.83	1.011	0.996	0.989
1.19	1.365	0.124	2.86	1.000	1.000	1.000

FFS25°,M1 = 2.88, SECTION 17

X = 15.05 cm, Me = 2.91, Pw = 0.126 kG/cm²,
Ue = 621.3 m/s, Te = 113.3 K, RHOe = 0.0394 kG s²/m

Y [cm]	PO [kG/cm²]	P [kG/cm²]	M	T/Te	U/Ue	RHO/RHOe
0.00	0.126	0.126	0.00	2.509	0.000	0.398
0.01	0.243	0.126	1.02	2.119	0.509	0.472
0.03	0.329	0.126	1.27	1.952	0.608	0.512
0.05	0.432	0.126	1.50	1.790	0.690	0.558
0.06	0.481	0.127	1.60	1.725	0.721	0.580
0.07	0.514	0.127	1.66	1.682	0.740	0.594
0.08	0.545	0.127	1.72	1.647	0.756	0.607
0.09	0.567	0.127	1.76	1.620	0.768	0.617
0.10	0.590	0.127	1.80	1.593	0.779	0.628
0.11	0.611	0.127	1.83	1.573	0.788	0.636
0.12	0.632	0.127	1.86	1.550	0.797	0.645
0.14	0.660	0.127	1.91	1.519	0.810	0.658
0.16	0.695	0.127	1.97	1.486	0.823	0.673
0.18	0.729	0.127	2.02	1.456	0.835	0.687
0.20	0.757	0.127	2.06	1.429	0.846	0.700
0.22	0.780	0.127	2.10	1.408	0.854	0.710
0.25	0.807	0.127	2.13	1.387	0.862	0.721
0.28	0.836	0.127	2.18	1.362	0.872	0.734
0.32	0.870	0.128	2.22	1.337	0.881	0.748
0.37	0.906	0.128	2.27	1.311	0.891	0.763
0.42	0.936	0.127	2.31	1.287	0.900	0.777
0.47	0.968	0.128	2.35	1.267	0.907	0.789
0.52	0.993	0.128	2.38	1.250	0.914	0.800
0.57	1.027	0.128	2.42	1.226	0.922	0.816
0.63	1.058	0.127	2.47	1.205	0.930	0.830
0.69	1.093	0.127	2.51	1.185	0.937	0.844
0.75	1.142	0.128	2.56	1.156	0.947	0.865
0.81	1.182	0.128	2.61	1.134	0.955	0.882
0.87	1.224	0.128	2.66	1.111	0.963	0.900
0.93	1.272	0.128	2.71	1.086	0.971	0.920
0.99	1.323	0.128	2.77	1.060	0.980	0.943
1.04	1.358	0.128	2.80	1.046	0.985	0.956
1.09	1.390	0.128	2.84	1.030	0.990	0.971

1.10	1.400	0.128	2.85	1.025	0.992	0.976
1.15	1.425	0.128	2.88	1.013	0.996	0.987
1.20	1.448	0.128	2.90	1.005	0.998	0.995
1.25	1.460	0.128	2.91	1.000	1.000	1.000

***************Boundary-Layer Parameters Through FFS25 Interaction************

FFS25*, M1 = 2.88

SECT.	Delta (mm)	Delta* (mm)	Theta (mm)	Cf1 x10**3
1	4.10	1.43	0.30	1.47
2	3.97	-	-	-
3	5.26	-	-	-
4	6.40	-	-	-
5	6.34	-	-	-
6	5.20	-	-	-
7	4.27	1.80	0.57	0.54
8	4.91	1.51	0.54	1.41
9	3.26	1.05	0.41	1.88
10	2.53	0.92	0.40	2.26
11	10.59	1.59	0.41	2.01
12	9.09	2.31	0.56	1.72
13	10.43	2.71	0.64	1.68
14	10.33	2.72	0.64	1.61
15	10.59	2.89	0.66	1.54
16	10.78	2.89	0.66	1.56
17	10.89	3.07	0.67	1.58

***************************II. Turbulence Data******************************

***************Incoming Boundary-Layer Profiles in Wind Tunnel T-325***********

Minf	Pstagnation (kG/cm^2)	P inf (kG/cm^2)	To inf (K)	Re1x10-6 (1/m)
3.00	3.562±0.09	0.097±0.002	295±5	28.0±2

EXTERNAL FLOW AND UNDISTURBED BOUNDARY LAYER
PARAMETERS IN SECTION 1

M1 = 2.95	Te1 = 108 K
P1 = 0.0994 kG/cm^2	Ue1 = 614.6 m/s
Delta = 2.27 mm	RHOe1=0.03205 kG s^2/m
Delta* = 0.79 mm	me1 = 19.8 kG s/m
Theta = 0.15 mm	Cf1 = 0.00153

Y (mm)	P0 (kG/cm^2)	P (kG/cm^2)	M	T/Te	U/Ue	RHO/RHOe
0.00	0.099	0.099	0.00	2.549	0.000	0.392
0.13	0.252	0.099	1.24	1.998	0.596	0.501
0.18	0.298	0.099	1.38	1.901	0.647	0.526
0.23	0.332	0.099	1.48	1.832	0.680	0.546
0.28	0.376	0.099	1.59	1.755	0.716	0.570
0.33	0.414	0.099	1.69	1.692	0.744	0.591
0.38	0.442	0.099	1.75	1.649	0.762	0.606
0.43	0.470	0.099	1.81	1.608	0.779	0.622
0.48	0.494	0.099	1.86	1.574	0.793	0.635
0.53	0.518	0.099	1.91	1.542	0.806	0.648
0.63	0.552	0.099	1.98	1.499	0.823	0.667
0.73	0.584	0.099	2.05	1.460	0.838	0.685
0.83	0.616	0.099	2.11	1.424	0.852	0.702
0.93	0.643	0.099	2.16	1.395	0.863	0.718
1.05	0.686	0.099	2.23	1.350	0.880	0.740
1.15	0.723	0.099	2.30	1.314	0.893	0.761
1.30	0.774	0.099	2.38	1.268	0.909	0.789
1.45	0.838	0.099	2.48	1.214	0.928	0.823
1.60	0.894	0.099	2.57	1.171	0.943	0.854
1.80	0.965	0.099	2.68	1.120	0.961	0.893
2.00	1.030	0.099	2.77	1.077	0.975	0.928
2.20	1.095	0.099	2.86	1.037	0.988	0.964
2.40	1.127	0.099	2.90	1.019	0.994	0.982
2.60	1.142	0.099	2.92	1.010	0.997	0.990

2.80	1.152	0.099	2.94	1.004	0.999	0.996
3.00	1.160	0.099	2.95	1.000	1.000	1.000
3.20	1.160	0.099	2.95	1.000	1.000	1.000

Y/Delta	<m>/me1	<U>/Ue1	<RHO>/RHOe1
0.07	1.76	2.54	0.87
0.09	1.96	2.55	0.98
0.13	2.39	2.57	1.78
0.18	2.82	2.46	2.11
0.22	3.03	2.45	2.23
0.26	3.21	2.40	2.33
0.31	3.46	2.39	2.50
0.35	3.72	2.47	2.64
0.40	4.04	2.51	2.85
0.44	4.03	2.39	2.85
0.48	4.23	2.40	2.98
0.53	4.46	2.38	3.15
0.57	4.71	2.38	3.29
0.62	4.94	2.34	3.28
0.66	4.98	2.26	3.43
0.70	4.96	2.14	3.47
0.75	4.91	2.02	3.44
0.79	4.73	1.87	3.26
0.84	4.60	1.73	3.17
0.93	3.66	1.28	2.53
1.01	2.41	0.79	1.66
1.10	1.29	0.42	0.89
1.19	0.70	0.22	0.48
1.28	0.50	0.16	0.34
1.37	0.42	0.14	0.30
1.45	0.40	0.12	0.27
1.54	0.37	0.11	0.26

***********SURFACE PRESSURE, FFS25, M1 = 2.95, P1 = 0.0994 kG/cm^2**************

X(mm)	Pw/P1
-36	1.000
-31	1.000
-26	1.020
-21	0.980
-16	1.020
-11	1.000
-6	2.040
-1	2.300
5	3.240
9	3.810
13	3.950
16	1.380
21	1.210
26	1.090
31	1.090
36	1.020
41	0.990
46	1.000
51	1.000

************HOT-WIRE ANEMOMETRY SURVEY LOCATIONS, FFS25**********************

SECT.	X(mm)
1	-35.0
2	10.0
3	18.0
4	34.0
5	59.0

*************************HOT-WIRE DATA, FFS25********************************

<m>e1/me1=0.37%, <m>max1/me1=5%

SECT.	1	2	3	4	5
X(mm)	-35	10	18	34	59
<m>e/<m>e1	1.00	9.30	6.89	5.59	4.97
<m>max/<m>max1	1.00	-	-	1.43	1.35

FFS25, SECTION 1

Delta = Delta1 = 2.27 mm;
<m>max/m1 = 5.0%, <m>max = <m>max1;
<u>max/Ue1 = 2.4%, <u>max = <u>max1;
<RHO>max/RHOe1 = 3.5%, <RHO>max = <RHO>max1.

Y / Delta1	<m> / <m>max1	<u> / <u>max1	<RHO> / <RHO>max1	U / Ue1	RHO / RHOe1	M
0.1	0.41	1.06	0.37	0.680	0.550	1.48
0.2	0.57	1.02	0.61	0.785	0.595	1.85
0.3	0.69	1.02	0.70	0.830	0.680	2.02
0.4	0.80	1.02	0.80	0.860	0.715	2.16
0.5	0.90	1.00	0.88	0.890	0.755	2.29
0.6	0.97	0.98	0.95	0.915	0.805	2.43
0.7	1.00	0.90	1.00	0.940	0.850	2.56
0.8	0.96	0.76	0.95	0.960	0.900	2.68
0.9	0.78	0.58	0.77	0.975	0.945	2.79
1.0	0.48	0.33	0.49	0.990	0.975	2.88
1.1	0.25	0.17	0.25	0.990	0.990	2.92
1.2	0.14	0.10	0.13	1.000	0.995	2.94
1.3	0.10	0.07	0.09	1.000	1.000	2.95
1.4	0.08	0.06	0.07	1.000	1.000	2.95

FFS25, SECTION 2
Delta = 1.80 Delta1

Y / Delta1	<m> / <m>max1	<u> / <u>max1	<RHO> / <RHO>max1	U / Ue1	RHO / RHOe1	M
0.7	4.43	2.88	2.78	0.595	2.370	1.23
0.8	4.40	2.71	2.87	0.620	2.420	1.28
0.9	4.21	2.45	2.89	0.645	2.475	1.35
1.0	3.70	2.02	2.67	0.665	2.530	1.42
1.1	2.87	1.51	2.11	0.685	2.570	1.46
1.2	2.03	1.05	1.51	0.690	2.585	1.48
1.3	1.39	0.72	1.03	0.690	2.590	1.48
1.4	0.98	0.50	0.73	0.690	2.597	1.48
1.5	0.82	0.43	0.61	0.690	2.597	1.48
1.6	0.75	0.38	0.56	0.690	2.597	1.48
1.7	0.72	0.38	0.53	0.690	2.597	1.48

FFS25, SECTION 3
Delta = 2.04 Delta1

Y / Delta1	<m> / <m>max1	<u> / <u>max1	<RHO> / <RHO>max1	U / Ue1	RHO / RHOe1	M
0.1	0.94	1.37	0.83	0.810	0.715	1.93
0.2	1.03	1.37	0.93	0.847	0.735	2.06
0.3	1.15	1.42	1.05	0.867	0.753	2.16
0.4	1.25	1.47	1.15	0.879	0.768	2.22
0.5	1.35	1.53	1.24	0.890	0.781	2.25
0.6	1.45	1.58	1.35	0.892	0.800	2.28
0.7	1.56	1.64	1.46	0.898	0.815	2.32
0.8	1.66	1.70	1.57	0.905	0.825	2.36
0.9	1.78	1.76	1.67	0.915	0.833	2.40
1.0	1.90	1.82	1.80	0.925	0.840	2.45
1.1	2.01	1.87	1.92	0.933	0.845	2.50
1.2	2.12	1.93	2.03	0.942	0.851	2.54
1.3	2.25	2.00	2.15	0.945	0.865	2.55
1.4	2.26	2.03	2.16	0.942	0.885	2.55
1.5	2.26	1.98	2.16	0.940	0.915	2.54
1.6	2.12	1.71	2.03	0.940	0.955	2.54
1.7	1.87	1.37	1.70	0.940	1.000	2.54
1.8	1.60	1.18	1.53	0.940	1.050	2.54
1.9	1.36	0.96	1.30	0.937	1.100	2.54
2.0	1.18	0.80	1.13	0.933	1.150	2.53
2.1	1.06	0.68	1.02	0.930	1.210	2.52
2.2	0.94	0.58	0.91	0.925	1.270	2.52

FFS25, SECTION 4
Delta = 2.14 Delta1

Y / Delta1	<m> / <m>max1	<u> / <u>max1	<RHO> / <RHO>max1	U / Ue1	RHO / RHOe1	M
0.1	0.58	1.37	0.41	0.690	0.575	1.44
0.2	0.75	1.20	0.65	0.765	0.675	1.88
0.3	0.68	1.02	0.68	0.720	0.695	1.95
0.4	0.69	1.00	0.69	0.725	0.700	1.98
0.5	0.70	1.00	0.71	0.735	0.705	2.02
0.6	0.73	1.00	0.74	0.745	0.715	2.05
0.7	0.77	1.01	0.78	0.755	0.730	2.10
0.8	0.80	1.01	0.83	0.765	0.741	2.14
0.9	0.85	1.03	0.88	0.775	0.758	2.19
1.0	0.91	1.04	0.95	0.785	0.778	2.24
1.1	0.97	1.06	1.02	0.795	0.795	2.29
1.2	1.05	1.10	1.11	0.808	0.813	2.34
1.3	1.14	1.13	1.20	0.819	0.830	2.40
1.4	1.23	1.16	1.31	0.828	0.850	2.46
1.5	1.33	1.20	1.41	0.839	0.867	2.51
1.6	1.43	1.23	1.53	0.849	0.888	2.56
1.7	1.49	1.22	1.59	0.859	0.910	2.62
1.8	1.50	1.18	1.61	0.865	0.930	2.68
1.9	1.46	1.09	1.57	0.875	0.955	2.73
2.0	1.37	0.98	1.47	0.882	0.975	2.78
2.1	1.24	0.86	1.33	0.889	0.988	2.81
2.2	1.08	0.73	1.17	0.893	1.000	2.83
2.3	0.93	0.63	1.01	0.895	1.050	2.85
2.4	0.79	0.52	0.86	0.900	1.100	2.88
2.5	0.67	0.43	0.72	0.900	1.150	2.89
2.6	0.57	0.38	0.62	0.900	1.200	2.89
2.7	0.52	0.34	0.57	0.900	1.200	2.89
2.8	0.49	0.32	0.53	0.900	1.200	2.89

FFS25, SECTION 5
Delta = 2.12 Delta1

Y / Delta1	<m> / <m>max1	<u> / <u>max1	<RHO> / <RHO>max1	U / Ue1	RHO / RHOe1	M
0.1	0.63	1.17	0.58	0.690	0.625	1.74
0.2	0.71	1.02	0.74	0.700	0.700	2.00
0.3	0.76	1.00	0.80	0.730	0.730	2.08
0.4	0.76	0.96	0.80	0.740	0.750	2.14
0.5	0.77	0.93	0.81	0.750	0.765	2.18
0.6	0.78	0.91	0.83	0.760	0.775	2.22
0.7	0.79	0.90	0.84	0.770	0.785	2.25
0.8	0.81	0.88	0.86	0.780	0.795	2.29
0.9	0.83	0.88	0.89	0.790	0.810	2.33
1.0	0.86	0.88	0.92	0.800	0.820	2.37
1.1	0.92	0.91	0.99	0.810	0.830	2.41
1.2	0.98	0.94	1.05	0.820	0.845	2.45
1.3	1.05	0.97	1.13	0.830	0.855	2.50
1.4	1.13	1.00	1.21	0.840	0.870	2.54
1.5	1.21	1.03	1.30	0.850	0.885	2.58
1.6	1.30	1.06	1.39	0.860	0.905	2.64

1.7	1.39	1.09	1.49	0.870	0.925	2.68
1.8	1.42	1.07	1.53	0.875	0.940	2.74
1.9	1.33	0.96	1.45	0.880	0.960	2.79
2.0	1.18	0.82	1.28	0.890	0.975	2.83
2.1	1.00	0.68	1.09	0.895	0.990	2.87
2.2	0.82	0.54	0.90	0.900	1.000	2.90
2.3	0.71	0.44	0.77	0.900	1.005	2.92
2.4	0.62	0.41	0.68	0.900	1.010	2.93
2.5	0.57	0.32	0.60	0.900	1.015	2.94
2.6	0.54	0.29	0.59	0.900	1.020	2.95
2.7	0.50	0.27	0.54	0.900	1.020	2.95
2.8	0.46	0.27	0.54	0.900	1.020	2.95
2.9	0.45	0.25	0.50	0.900	1.020	2.95

************************III. Heat Transfer Data******************************

*********Flow Conditions for FFS25 Heat Transfer Tests in Tunnel T-333*********

M1 = 3.01 +/- 0.02
Pstagnation = 4.520 kg/cm**2
Pinf = 0.123 kg/cm**2
Tstagnation =263.0 K
Rel/m = 42E+06

M1 = 4.03 +/- 0.02
Pstagnation = 8.150 kg/cm**2
Pinf = 0.54 kg/cm**2
Tstagnation = 276.0 K
Rel/m = 40E+06

**************Incoming Boundary-Layer Profiles in Wind Tunnel T-333**********

Me = 3.02, Pw = 0.125 kg/cm**2, ReL = 42x10E+06/m, Te = 93.18 K, Ue = 584.1 m/s,
RHOe = 0.0475 kg-s**2/m**4, Delta = 2.06 mm, Delta* = 0.68 mm, theta = 0.12 mm.

Y (mm)	Po (kg/cm**2)	P (kg/cm**2)	M	T/Te	U/Ue	RHO/RHOe
0.00	0.125	0.125	0.00	2.622	0.000	0.381
0.17	0.316	0.125	1.24	2.058	0.590	0.486
0.24	0.473	0.126	1.59	1.810	0.708	0.552
0.30	0.539	0.125	1.72	1.717	0.747	0.582
0.39	0.608	0.126	1.83	1.640	0.778	0.610
0.45	0.638	0.128	1.87	1.618	0.787	0.618
0.55	0.807	0.126	2.14	1.442	0.853	0.694
0.67	0.846	0.126	2.20	1.409	0.865	0.710
0.74	0.898	0.126	2.27	1.367	0.880	0.732
0.83	0.959	0.128	2.33	1.332	0.892	0.751
0.93	0.977	0.126	2.38	1.307	0.900	0.765
1.00	1.016	0.126	2.43	1.280	0.910	0.781
1.08	1.050	0.126	2.47	1.257	0.917	0.796
1.18	1.140	0.128	2.56	1.211	0.933	0.826
1.47	1.230	0.126	2.68	1.148	0.953	0.871
1.58	1.300	0.127	2.75	1.116	0.964	0.896
1.78	1.410	0.128	2.86	1.067	0.979	0.937
1.86	1.430	0.127	2.89	1.053	0.984	0.950
1.96	1.450	0.128	2.90	1.048	0.985	0.954
2.03	1.490	0.129	2.93	1.036	0.989	0.966
2.12	1.500	0.128	2.95	1.026	0.992	0.974
2.22	1.540	0.128	3.00	1.009	0.997	0.991
2.32	1.550	0.127	3.02	1.000	1.000	1.000

Me = 4.01, Pw = 0.052 kg/cm**2, ReL = 40E+06/m, Te = 65.53 K, Ue = 650.3 m/s,
RHOe = 0.0274 kg-s**2/m**4, Delta = 2.50 mm, Delta* = 1.16 mm, theta = 0.14 mm.

Y (mm)	PO (kg/cm**2)	P (kg/cm**2)	M	T/Te	U/Ue	RHO/RHOe
0.00	0.052	0.052	0.00	3.858	0.000	0.259
0.17	0.122	0.052	1.18	3.087	0.520	0.324
0.25	0.132	0.052	1.25	3.018	0.542	0.331
0.32	0.166	0.052	1.45	2.811	0.605	0.356
0.39	0.197	0.052	1.60	2.647	0.651	0.378
0.45	0.227	0.052	1.74	2.507	0.688	0.399
0.51	0.254	0.052	1.85	2.394	0.716	0.418
0.59	0.306	0.052	2.06	2.202	0.761	0.454
0.66	0.359	0.052	2.24	2.036	0.798	0.491
0.75	0.408	0.052	2.40	1.904	0.827	0.525
0.82	0.443	0.052	2.51	1.819	0.845	0.550
0.91	0.453	0.052	2.54	1.797	0.849	0.557
1.01	0.471	0.052	2.59	1.757	0.857	0.569
1.10	0.494	0.052	2.66	1.709	0.867	0.585
1.18	0.522	0.052	2.74	1.654	0.878	0.605
1.24	0.540	0.052	2.78	1.620	0.885	0.617
1.31	0.560	0.052	2.84	1.585	0.892	0.631
1.39	0.585	0.052	2.90	1.542	0.900	0.648
1.47	0.607	0.052	2.96	1.507	0.907	0.664
1.54	0.618	0.052	2.99	1.490	0.910	0.671
1.59	0.640	0.052	3.04	1.456	0.917	0.687
1.65	0.672	0.052	3.12	1.411	0.925	0.709
1.72	0.720	0.052	3.24	1.347	0.937	0.742
1.77	0.750	0.052	3.30	1.310	0.944	0.763
1.84	0.753	0.052	3.31	1.307	0.945	0.765
1.91	0.766	0.052	3.34	1.292	0.948	0.774
1.99	0.797	0.052	3.41	1.257	0.954	0.796
2.06	0.825	0.052	3.47	1.227	0.960	0.815
2.13	0.861	0.052	3.55	1.190	0.966	0.840
2.19	0.906	0.052	3.63	1.148	0.974	0.872
2.26	0.951	0.052	3.74	1.108	0.981	0.903
2.33	0.952	0.052	3.74	1.107	0.981	0.903
2.39	0.957	0.052	3.75	1.103	0.982	0.907
2.45	0.996	0.052	3.82	1.071	0.988	0.934
2.51	1.018	0.052	3.87	1.053	0.991	0.949
2.59	1.068	0.052	3.96	1.016	0.997	0.984
2.65	1.063	0.052	3.95	1.020	0.996	0.981
2.73	1.091	0.052	4.01	1.000	1.000	1.000

***************Heat Transfer Data on Model FFS25****************************

M1 = 3.01, a1 = 280 W/m**2 K

X(mm)	a/a1	Trw	Tw
-36.5	1.16	248.2	256.8
-28.0	1.02	244.2	256.8
-25.0	1.00	244.4	258.1
-21.0	0.93	244.7	257.2
-19.0	0.91	250.1	259.4
-16.0	0.98	243.8	257.2
-13.0	0.89	247.0	259.4
-10.0	1.14	249.7	259.5
- 7.0	1.31	250.1	261.6
- 4.0	1.29	247.5	258.5
- 2.0	1.30	251.0	261.0
0.0	1.34	248.1	259.1
3.0	1.65	253.7	264.2
5.0	1.67	253.4	263.7
6.5	1.93	253.8	263.7
10.5	2.33	253.6	262.1
12.5	3.86	253.9	261.7
13.5	3.68	250.8	262.0
14.5	3.17	242.8	256.8
15.0	3.11	242.7	256.7
17.0	2.55	243.0	258.7
18.0	2.33	242.4	258.6
19.5	2.37	242.8	258.6
20.5	2.19	244.3	259.3

X(mm)	a/a1	Trw	Tw
22.5	2.00	244.3	260.9
23.5	1.83	245.8	261.7
25.5	1.84	250.6	265.8
26.5	1.81	247.6	263.4
28.0	1.89	247.7	264.6
29.0	1.81	247.8	265.2
30.5	1.80	247.3	265.2
32.0	1.71	248.0	265.1
33.0	1.83	247.8	265.8
34.0	1.76	248.0	265.5
35.5	1.82	248.2	265.9
37.0	1.76	248.4	266.2
39.0	1.75	248.3	266.5
41.0	1.76	248.1	266.8
49.0	1.82	248.4	263.7
54.0	1.74	247.9	264.1
61.0	1.54	247.6	263.4
69.0	1.30	247.6	271.4
74.5	1.18	248.0	272.3
78.5	1.11	247.8	272.3
83.5	1.10	247.8	271.1

M1 = 4.03, a1 = 189 W/m**2

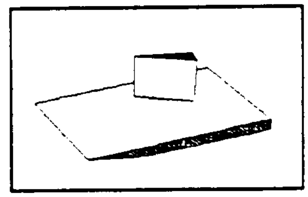
X(mm)	a/a1	Trw	Tw
-24.0	0.98	249.4	274.3
-21.0	1.02	250.0	274.0
-18.0	0.95	259.6	287.0
-15.0	1.02	248.7	272.4
-12.0	0.90	248.5	271.7
- 9.0	0.90	245.3	269.3
- 8.0	0.94	246.6	272.3
- 7.5	0.97	244.1	270.3
- 6.0	1.17	234.0	262.1
- 5.0	1.17	247.6	276.7
- 3.5	1.23	248.1	277.0
- 3.0	1.25	242.5	272.0
- 2.0	1.29	247.5	277.9

X(mm)	a/a1	Trw	Tw
14.5	2.42	239.4	251.7
15.0	2.51	238.8	251.7
16.0	2.33	238.5	252.8
16.5	2.42	237.9	252.3
17.0	2.50	238.8	254.2
18.0	2.50	238.3	253.5
19.0	2.60	239.4	255.0
19.5	2.45	239.4	254.7
20.0	2.55	239.4	254.7
21.0	2.40	239.7	256.0
22.5	2.50	241.7	258.2
23.5	2.33	241.6	258.6
24.5	2.45	242.0	258.9

0.0	1.40	242.5	272.9
5.5	2.35	244.4	277.0
8.0	2.78	246.0	252.5
9.0	3.04	245.1	252.2
10.0	3.90	245.8	253.2
11.0	4.01	245.8	253.2
12.0	4.00	243.6	251.4
13.0	3.90	242.9	251.4
13.5	3.00	240.8	251.6
14.0	2.69	244.4	243.0

26.0	2.45	243.3	260.1
28.5	2.40	243.9	261.4
30.0	2.34	243.8	261.3
31.0	2.30	244.2	262.0
32.0	2.45	244.7	262.0
33.5	2.30	245.1	262.8
34.5	2.40	245.4	262.9
38.0	2.40	246.3	263.6
39.5	2.40	246.1	263.6
41.0	2.30	246.3	263.9
42.5	2.36	246.6	268.6
44.0	2.30	249.6	272.3
49.0	2.45	245.9	268.8
54.0	2.36	246.9	271.3
64.0	1.75	245.0	264.5
69.0	1.65	247.3	265.4
74.0	1.47	247.3	265.4
79.0	1.34	247.6	265.7
84.0	1.32	247.6	265.3

Ref.: 49, 32, 10
Author: Bogdonoff, S. M., *et al*
Geometry: 3-D Fin
Mach number: 3
Data: p_{wall}, mean flowfield surveys ("cobra" probe)



Knight, D.D., Horstman, C.C., Bogdonoff, S.M. and Shapey, B.L., "The Flowfield Structure of the 3-D Shock Wave - Boundary Layer Interaction Generated by a 20 deg Sharp Fin at Mach 3," *AIAA Paper 86-0343*, 1986.

Goodwin, S. "An Exploratory Investigation of Sharp-Fin Induced Shock Wave/Turbulent Boundary Layer Interactions at High Shock Strengths," MS Thesis, Dept. of Mechanical and Aerospace Engineering, Princeton Univ., 1984.

Knight, D.D., Horstman, C.C., Shapey, B., and Bogdonoff, S. M., "Structure of Supersonic Turbulent Flow Past a Sharp Fin," *AIAA Journal*, Vol 25, Oct. 1987, pp. 1331-1337.

Shapey, B., MS Thesis, Dept. of Mechanical and Aerospace Engineering, Princeton Univ., 1986.

Bogdonoff, S.M. and Shapey, B.L., "Three-Dimensional Shock Wave Turbulent Boundary Layer Interaction for a 20 deg Sharp Fin at Mach 3," *AIAA Paper 87-0554*, 1987.

The following is an edited version (edited by C. C. Horstman) of the data obtained at the Princeton Gas Dynamics Lab in 1985-1986 for a 20-degree sharp fin interaction at Mach 3. The data are presented in two parts. Part 1 includes profile data while part 2 contains surface pressure data. Each part is headed by a description of the data format.

Part 1 contains contains surveys carried out with a computer-controlled nulling yaw probe ("cobra probe"). This probe measured pitot pressure and yaw angle along survey lines in the y-direction, *ie* normal to the tunnel wall which supported the turbulent boundary layer. The yaw angles thus measured lie in the horizontal (x-z) plane. The survey locations tabulated in part 1 and shown in the diagram below were chosen to provide detailed information within the separated region produced by this relatively strong swept-shock/boundary layer interaction. Since the tunnel-floor boundary-layer thickness is significant compared to the spanwise locations of the survey stations from the fin leading edge, it appears likely that the data are at least partially within the non-conical, fully 3-D "inception zone" of the interaction. Users of the data should bear this in mind.

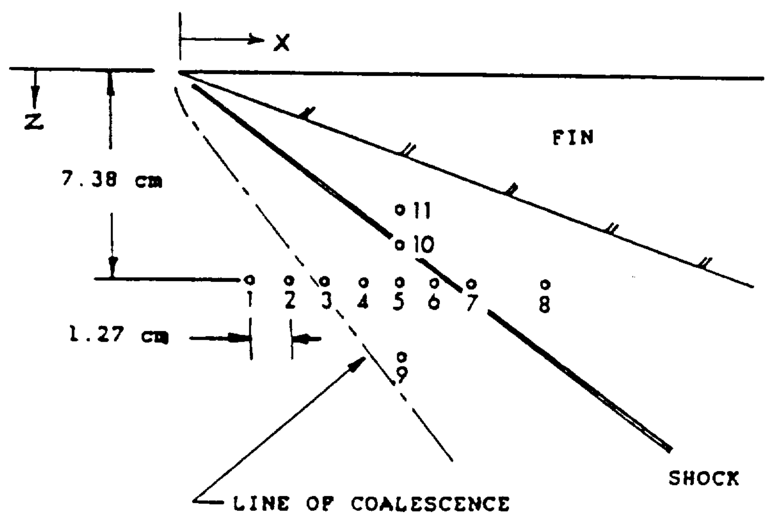
In part 1, where an undisturbed freestream exists, upstream of the inviscid shock and outside of the interaction, the freestream yaw angle is defined as zero. For stations 2, 3, 4, and 5 the yaw data show a non-zero freestream yaw. This is caused by a slight misalignment of the probe of around 1 to 2 degrees. A uniform shift of the yaw profile to bring the freestream yaw to zero should correct this.

Downstream of the inviscid shock it is difficult to tell exactly how well the probe is aligned since there is no undisturbed freestream to check against. For these stations the probe is aligned parallel to the tunnel wall as closely as possible, within about one degree.

Note: none of the corrections listed above have actually been applied to the yaw data tabulated below. Only the uncorrected yaw profiles are tabulated.

Users of these data should be careful of data very close to the floor. The point closest to the floor is taken when the probe touches the floor and the probe is not nulled.

Station coordinates X and Z are measured in inches from the fin apex, as illustrated in the diagram given below. The survey station coordinates are tabulated early in part 1. Surface pressures were measured along rows of orifices aligned with the freestream (x) direction.



Location of Experimental Surveys

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**********************************************************************
Data of Princeton Gas Dynamics Lab for 3-D Sharp Fin at M = 3, a = 20 deg
**********************************************************************

      TEST CONDITIONS

      Freesteam Mach number = 2.93
      Nominal freestream total pressure = 100psia or 690kPa
      Nominal freestream total temperature = 270K
      Wall temperature approx = 270K
      Reynolds number = 7.0E+08/meter
      Initial boundary layer parameters:
         Delta @ x=0  1.3cm
         Delta star (compressible) @ x=0  0.39cm
         Momentum thickness @ x=0  0.072cm

========================================================================

                                PART ONE

========================================================================

***********************SURVEY STATION COORDINATES************************

      STATION X(IN)   Z(IN)   RUN
         1    0.98    2.906   808
         2    1.48    2.906   808
         3    1.98    2.906   807
         4    2.48    2.906   8091
         5    2.98    2.906   809
         6    3.48    2.906   730
         7    3.98    2.906   807
         8    4.98    2.906   8121
         9    2.98    3.906   807
        11    2.98    1.906   8081

**********************************************************************

      Format of survey data files:

      RUN  TEST  STATION  NPTS  DTYPE  POMEAN  TOMEAN  PIMEAN  XLOC
      DATE  COMMENT
      BLANK LINE
      YDATA  PTDATA  YAWDATA
        "       "       "
        "       "       "
      POMEAN, PIMEAN, PTDATA are in Pascals.
      TOMEAN is in degrees Kelvin.
      XLOC is in inches.
      YDATA is in meters.
      YAWDATA is in degrees.

********************************SURVEY DATA****************************

808 5 1 65  1      0.6898E+06 268.7    0.1993E+05 0.98
8-AUG-85TOTAL HEAD SURVEY, 20 DEG FIN, BS

0.8900E-040.5127E+050.1012
0.2900E-030.7669E+050.2047
0.9548E-030.9048E+050.1194
0.1225E-020.9910E+050.1803
0.1682E-020.1026E+060.1012
0.2138E-020.1121E+060.1743
0.2594E-020.1169E+060.1073
0.2795E-020.1206E+060.1864
0.3498E-020.1259E+060.1134
0.4008E-020.1366E+060.1864
0.4449E-020.1389E+060.9508E-01
0.4952E-020.1452E+060.1925
0.5709E-020.1552E+060.9508E 01
0.6150E-020.1541E+060.1438
0.6521E-020.1610E+060.1560
0.7286E-020.1676E+060.8899E-01
0.7974E 020.1765E+060.1682
0.8523E-020.1814E+060.5245E-01
0.9103E-020.1874E+060.1560
0.9776E-020.1940E+060.9508E-01
0.1032E-010.1995E+060.1621
0.1105E-010.2082E+060.9508E-01
0.1160E-010.2162E+060.1925
0.1236E-010.2205E+060.9508E-01
0.1286E-010.2263E+060.1925
0.1346E-010.2274E+060.8290E-01
0.1416E-010.2326E+060.1073
0.1488E-010.2312E+060.1803
0.1547E-010.2321E+060.8899E-01
0.1594E-010.2334E+060.1925
0.1666E-010.2320E+060.7681E-01
0.1735E-010.2332E+060.1438
0.1782E-010.2331E+060.2169
0.1859E-010.2351E+060.1012
0.1914E-010.2348E+060.2656
0.1982E-010.2359E+060.1377
0.2049E-010.2348E+060.1743
0.2109E-010.2333E+060.1986
0.2173E-010.2337E+060.2473
0.2241E-010.2346E+060.1864
0.2293E-010.2353E+060.2656
0.2358E-010.2367E+060.2717
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0.2548E-010.2390E+060.2839
0.2620E-010.2385E+060.1621
0.2668E-010.2397E+060.2778
0.2739E-010.2390E+060.1925
0.2804E-010.2386E+060.2412
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0.2980E-010.2379E+060.3082
0.3056E-010.2395E+060.1682
0.3115E-010.2400E+060.2778
0.3179E-010.2391E+060.2717
0.3251E-010.2396E+060.2108
0.3302E-010.2398E+060.2961
0.3377E-010.2395E+060.2047
0.3438E-010.2398E+060.2900
0.3499E-010.2387E+060.2352
0.3572E-010.2398E+060.1925
0.3642E-010.2389E+060.2900
0.3701E-010.2386E+060.1743
0.3765E-010.2389E+060.2412
0.3822E-010.2370E+060.1560

808 3 2 66  1      0.6898E+06 268.9    0.1993E+05 1.48
8-AUG-85TOTAL HEAD SURVEY, 20 DEG FIN, BS

0.8900E-040.5353E+05 1.213
0.2823E-030.7772E+05 1.216
0.8002E-030.9365E+05 1.219
0.1133E-020.9837E+05 1.222
0.1519E-020.1033E+06 1.264
0.1805E-020.1078E+06 1.301
0.2076E-020.1117E+06 1.392
0.2779E-020.1207E+06 1.307
0.2996E-020.1245E+06 1.319
0.3606E-020.1324E+06 1.325
0.4287E-020.1391E+06 1.350
0.4952E-020.1444E+06 1.161
0.5508E-020.1522E+06 1.179
0.6243E-020.1561E+06 1.143
0.6745E-020.1682E+06 1.234
0.7147E-020.1673E+06 1.258
0.7681E-020.1765E+06 1.240
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0.8655E-020.1868E+06 1.277
0.9358E-020.1911E+06 1.210
0.9969E-020.1981E+06 1.277
0.1056E-010.2068E+06 1.222
0.1124E-010.2122E+06 1.197
0.1179E-010.2179E+06 1.270
0.1253E-010.2254E+06 1.197
0.1307E-010.2279E+06 1.289
0.1368E-010.2293E+06 1.216
0.1437E-010.2317E+06 1.191
0.1491E-010.2318E+06 1.289
0.1564E-010.2339E+06 1.161
0.1622E-010.2332E+06 1.246
0.1679E-010.2344E+06 1.234
0.1755E-010.2346E+06 1.203
0.1806E-010.2369E+06 1.283
0.1875E-010.2369E+06 1.197
0.1939E-010.2378E+06 1.203
0.1993E-010.2373E+06 1.252
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0.2194E-010.2395E+06 1.210
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0.2386E-010.2393E+06 1.270
0.2441E-010.2370E+06 1.283
0.2520E-010.2367E+06 1.216
0.2562E-010.2384E+06 1.295
0.2634E-010.2380E+06 1.216
0.2700E-010.2395E+06 1.203
0.2751E-010.2400E+06 1.283
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0.2882E-010.2412E+06 1.307
0.2941E-010.2416E+06 1.246
0.3011E-010.2423E+06 1.210
0.3074E-010.2419E+06 1.246
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0.3205E-010.2419E+06 1.191
0.3260E-010.2423E+06 1.283
0.3332E-010.2425E+06 1.203
0.3393E-010.2427E+06 1.203
0.3453E-010.2426E+06 1.277
0.3529E-010.2420E+06 1.179
0.3587E-010.2419E+06 1.258
0.3651E-010.2429E+06 1.216
0.3721E-010.2421E+06 1.173
0.3773E-010.2439E+06 1.246
0.3849E-010.2440E+06 1.185

807 8 3 69  1      0.6890E+06 270.6    0.2031E+05 1.98
7-AUG-85TOTAL HEAD SURVEY, 20 DEG FIN, BS

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0.2279E-030.5676E+05 40.39
0.9147E-030.8041E+05 12.26
0.9842E-030.8917E+05 11.01
0.1139E-020.9246E+05 10.61
0.1524E-020.1014E+06 8.632
0.1825E-020.1128E+06 7.803
0.1995E-020.1157E+06 7.608
0.2219E-020.1238E+06 7.157
0.2535E-020.1289E+06 7.029
0.2929E-020.1359E+06 6.956
0.3261E-020.1438E+06 6.895
0.3485E-020.1457E+06 6.962
0.4087E-020.1580E+06 6.554
0.4364E-020.1612E+06 6.408
0.5082E-020.1663E+06 6.261
0.5622E-020.1679E+06 6.139
0.6301E-020.1680E+06 5.115
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0.7613E-020.1744E+06 2.946
0.8200E-020.1795E+06 2.306
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0.9435E-020.1896E+06 1.934
0.1018E-010.1980E+06 1.800
0.1073E-010.2038E+06 1.861
0.1133E-010.2124E+06 1.940
0.1202E-010.2176E+06 1.855
0.1262E-010.2243E+06 1.879
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0.1386E-010.2291E+06 2.007
0.1450E-010.2317E+06 1.934
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0.1884E-010.2350E+06 2.007
0.1953E-010.2351E+06 1.928
0.2015E-010.2355E+06 1.897
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0.2203E-010.2360E+06 1.964
0.2264E-010.2346E+06 2.117
0.2329E-010.2358E+06 1.970
0.2400E-010.2350E+06 1.861
0.2458E-010.2348E+06 1.903
0.2519E-010.2351E+06 1.928
0.2585E-010.2349E+06 1.861
0.2637E-010.2351E+06 1.977
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0.2828E-010.2343E+06 1.934
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0.3594E-010.2381E+06 1.958
0.3661E-010.2379E+06 1.897
0.3720E-010.2375E+06 1.940
0.3793E-010.2369E+06 1.849
0.3848E-010.2373E+06 1.891

8091 2 4 80  1      0.6892E+06 275.7    0.2014E+05 2.48
9-AUG-85TOTAL HEAD, 20 DEG FIN, BS

0.8900E-040.5538E+05 33.08
0.2591E-030.6541E+05 37.07
0.9861E-030.6946E+05 53.24
0.1520E-020.7163E+05 50.84
0.2162E-020.8453E+05 38.04
0.2487E-020.9054E+05 27.41
0.2734E-020.9663E+05 24.01
0.3043E-020.1074E+06 17.86
0.3190E-020.1112E+06 17.83
0.3538E-020.1168E+06 15.50
0.3871E-020.1272E+06 13.97
0.4041E-020.1297E+06 12.22
0.4374E-020.1381E+06 11.14
0.4567E-020.1476E+C6 9.434
0.4768E-020.1542E+06 9.252
0.4930E-020.1540E+06 9.240
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0.5603E 020.1668E+06 8.624
0.5866E-020.1699E+06 8.374
0.6570E-020.1824E+06 7.479
0.6872E-020.1881E+06 7.229
0.7197E-020.1953E+06 7.101
0.7514E-020.2016E+06 6.894
0.7808E-020.2096E+06 6.632
0.8132E-020.2104E+06 6.516
0.8720E-020.2282E+06 6.395
0.8898E-020.2304E+06 5.993
0.9664E-020.2466E+06 5.030
0.9934E-020.2510E+06 4.604
0.1059E-010.2631E+06 4.384
0.1095E-010.2694E+06 4.396
0.1126E-010.2805E+06 4.311
0.1142E-010.2723E+06 4.348
0.1157E-010.2815E+06 4.348
0.1160E-010.2770E+06 4.372
0.1174E-010.2741E+06 4.305
0.1188E-010.2772E+06 4.366
0.1219E-010.2751E+06 4.403
0.1280E-010.2721E+06 4.634
0.1338E-010.2684E+06 5.030
0.1402E-010.2502E+06 5.968
0.1413E-010.2470E+06 6.401
0.1459E-010.2407E+06 6.388
0.1486E-010.2365E+06 6.194
0.1558E-010.2336E+06 5.554
0.1620E-010.2375E+06 3.397
0.1667E-010.2352E+06 2.301
0.1741E-010.2356E+06 1.947
0.1792E-010.2357E+06 1.874
0.1864E-010.2369E+06 1.850
0.1918E-010.2362E+06 1.868
0.1985E-010.2365E+06 1.838
0.2048E-010.2370E+06 1.746
0.2118E-010.2389E+06 1.734
0.2178E-010.2360E+06 1.868
0.2248E-010.2367E+06 1.673
0.2307E-010.2357E+06 1.692
0.2375E-010.2363E+06 1.655
0.2423E-010.2355E+06 1.771
0.2496E-010.2357E+06 1.649
0.2559E-010.2354E+06 1.698
0.2633E-010.2359E+06 1.643
0.2680E-010.2356E+06 1.655
0.2755E-010.2364E+06 1.673
0.2805E-010.2365E+06 1.752
0.2875E-010.2373E+06 1.649
0.2938E-010.2380E+06 1.564
0.2992E-010.2367E+06 1.655
0.3061E-010.2363E+06 1.618
0.3125E-010.2358E+06 1.625
0.3189E-010.2344E+06 1.612
0.3262E-010.2337E+06 1.539
0.3316E-010.2317E+06 1.637
0.3382E-010.2304E+06 1.551
0.3447E-010.2305E+06 1.618
0.3507E-010.2301E+06 1.612
0.3579E-010.2308E+06 1.545
0.3643E-010.2328E+06 1.564
0.3703E-010.2340E+06 1.631
0.3766E-010.2343E+06 1.612
0.3839E-010.2346E+06 1.564

809 5 5 85  1      0.6895E+06 274.1    0.2012E+05 2.98
9-AUG-85TOTAL HEAD SURVEY, 20 DEG FIN, BS

0.8900E-040.7349E+05 53.45
0.1277E-030.9212E+05 55.20
0.4448E-030.1033E+06 60.58
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0.8082E-030.1053E+06 60.05
0.1303E-020.1053E+06 55.97
0.1875E-020.1018E+06 50.59
0.2448E-020.9641E+05 46.93
0.2842E-020.9443E+05 44.55
0.3523E-020.9335E+05 39.79
0.4064E-020.9424E+05 32.44
0.4520E-020.1023E+06 25.11
0.4907E-020.1065E+06 21.87
0.5588E-020.1183E+06 16.25
0.5781E-020.1261E+06 13.66
0.6152E-020.1315E+06 12.22
0.6477E-020.1439E+06 9.160
0.6655E-020.1455E+06 9.075
0.7250E-020.1580E+06 7.540
0.7552E-020.1653E+06 7.150
0.7830E-020.1708E+06 6.748
0.8225E-020.1763E+06 6.346
0.8588E-020.1833E+06 6.102
0.8751E-020.1897E+06 5.968
0.8983E-020.1922E+06 5.682
0.9710E-020.2043E+06 4.926
0.1003E-010.2129E+06 4.744
0.1031E-010.2138E+06 4.768
0.1072E-010.2321E+06 4.555
0.1093E-010.2328E+06 4.201
0.1160E-010.2384E+06 3.336
0.1214E-010.2541E+06 3.026
0.1239E-010.2557E+06 3.038
0.1300E-010.2700E+06 2.928
0.1328E-010.2747E+06 2.983
0.1365E-010.2833E+06 2.928
0.1395E-010.2906E+06 2.928
0.1422E-010.2900E+06 3.007
0.1469E-010.2991E+06 3.001
0.1499E-010.3054E+06 2.922
0.1532E-010.3110E+06 3.014
0.1558E-010.3115E+06 2.971
0.1611E-010.3211E+06 3.062
0.1645E-010.3250E+06 3.062
0.1703E-010.3251E+06 3.056
0.1777E-010.3269E+06 2.977
0.1828E-010.3291E+06 3.056
0.1880E-010.3270E+06 3.007
0.1940E-010.3253E+06 3.056
0.2003E-010.3187E+06 3.836
0.2053E-010.2885E+06 3.367
0.2075E-010.2802E+06 3.684
0.2089E-010.2625E+06 3.324
0.2096E-010.2548E+06 3.324
0.2101E-010.2489E+06 3.123
0.2114E-010.2428E+06 2.270
0.2115E-010.2424E+06 1.527
0.2181E-010.2374E+06-.4223
0.2249E-010.2363E+06-1.044
0.2320E-010.2372E+06-1.080
0.2367E-010.2363E+06-1.080
0.2458E-010.2373E+06-1.117
0.2491E-010.2372E+06-1.068
0.2564E-010.2378E+06-1.190
0.2621E-010.2371E+06-1.086
0.2679E-010.2365E+06-1.184
0.2738E-010.2383E+06-1.135
0.2787E-010.2357E+06-1.031
0.2856E-010.2362E+06-1.166
0.2914E-010.2352E+06-1.208
0.2972E-010.2352E+06-1.038
0.3043E-010.2350E+06-1.135
0.3098E-010.2353E+06-1.062
0.3163E-010.2356E+06-1.147
0.3233E-010.2368E+06-1.147
0.3296E-010.2365E+06-1.251
0.3363E-010.2363E+06-1.172
0.3410E-010.2356E+06-1.281
0.3446E-010.2371E+06-1.348
0.3514E-010.2374E+06-1.360
0.3570E-010.2364E+06-1.348
0.3631E-010.2359E+06-1.434
0.3689E-010.2358E+06-1.330
0.3754E-010.2357E+06-1.348
0.3815E-010.2345E+06-1.354
0.3863E-010.2340E+06-1.342

 730 3 6 85  5       0.6885E+06 273.5     0.2010E+05 3.48
30-JUL-85 COBRA TEST, 20 DEG FIN, BS

0.3175E-030.1141E+06 64.55
0.3407E-030.1149E+06 64.53
0.3904E-030.1226E+06 64.48
0.4638E-030.1282E+06 63.95
0.7810E-030.1409E+06 62.18
0.8640E-030.1397E+06 62.08
0.9654E-030.1387E+06 61.33
0.1248E-020.1345E+06 60.00
0.1567E-020.1312E+06 59.45
0.1629E-020.1299E+06 59.37
0.2247E-020.1192E+06 56.60
0.2324E-020.1173E+06 56.54
0.2397E-020.1160E+06 56.00
0.2729E-020.1106E+06 54.47
0.2804E-020.1092E+06 54.38
0.3109E-020.1043E+06 52.15
0.3176E-020.1023E+06 52.06
0.3243E-020.1016E+06 51.35
0.3322E-020.9943E+05 50.74
0.3402E-020.9828E+05 50.14
0.3481E-020.9773E+05 49.51
0.3630E-020.9559E+05 48.36
0.3692E-020.9516E+05 48.28
0.3731E-020.9538E+05 47.79
0.3820E-020.9413E+05 46.89
0.3873E-020.9243E+05 46.28
0.3958E-020.9286E+05 45.58
0.4026E-020.9158E+05 44.83
0.4109E-020.9096E+05 44.28
0.4238E-020.8981E+05 42.91
0.4265E-020.8919E+05 42.82
0.4597E-020.8728E+05 38.92
0.4639E-020.8794E+05 38.84
0.4970E-020.8656E+05 35.22
0.4998E-020.8678E+05 35.17
0.5149E-020.8588E+05 33.25
0.5160E-020.8602E+05 33.18
0.5214E-020.8700E+05 32.25
0.5520E-020.8679E+05 29.02
0.5540E-020.8662E+05 28.95
0.5646E-020.8681E+05 28.12
0.5949E-020.8735E+05 25.46
0.6000E-020.8848E+05 25.39
0.6300E-020.9039E+05 21.88
0.6323E-020.8994E+05 21.83
0.6374E-020.9077E+05 21.23
0.6469E-020.9173E+05 20.33
0.6545E-020.9171E+05 19.71
0.6634E-020.9403E+05 19.13
0.6713E-020.9239E+05 18.47
0.6771E-020.9485E+05 17.80
0.7423E-020.1065E+06 13.10
0.7487E-020.1019E+06 13.02
0.7798E-020.1051E+06 11.04
0.7875E-020.1103E+06 10.94
0.7953E-020.1121E+06 10.26
0.8110E-020.1134E+06 9.596
0.8731E-020.1280E+06 7.842
0.9059E-020.1306E+06 7.805
0.9141E-020.1337E+06 7.712
0.9290E-020.1368E+06 6.989
0.9609E-020.1393E+06 6.102
0.1026E-010.1490E+06 5.224
0.1090E-010.1573E+06 5.211
0.1150E-010.1634E+06 5.190
0.1214E-010.1852E+06 4.788
0.1276E-010.1854E+06 4.797
0.1338E-010.1941E+06 4.198
0.1402E-010.2078E+06 4.202
0.1463E-010.2147E+06 4.209
0.1495E-010.2161E+06 4.529
0.1558E-010.2296E+06 3.751
0.1619E-010.2403E+06 3.755
0.1683E-010.2470E+06 3.749
0.1747E-010.2560E+06 3.744
0.1808E-010.2615E+06 3.744
0.1872E-010.2701E+06 3.720
0.1934E-010.2802E+06 3.228
0.1967E-010.2805E+06 3.219
0.1998E-010.2837E+06 2.650
0.2005E-010.2827E+06 2.731

 807 2 7 90  1       0.6888E+06 271.1     0.2029E+05 3.98
7-AUG-85 TOTAL HEAD SURVEY, 20 DEG FIN, BS

0.8900E-040.1064E+06 64.78
0.2895E-030.1628E+06 65.10
0.8987E-030.1673E+06 64.53
0.1500E-020.1576E+06 61.08
0.1847E-020.1502E+06 59.91
0.2032E-020.1442E+06 59.60
0.2456E-020.1380E+06 58.83
0.2780E-020.1308E+06 58.42
0.3073E-020.1251E+06 58.16
0.3336E-020.1181E+06 57.44
0.3713E-020.1129E+06 56.47
0.3999E-020.1071E+06 54.77
0.4284E-020.1036E+06 53.73
0.4870E-020.9697E+05 49.18
0.5533E-020.9206E+05 44.19
0.6220E-020.9202E+05 40.92
0.6775E-020.9387E+05 35.99
0.7492E-020.9826E+05 30.30
0.8094E-020.1067E+06 25.48
0.8618E-020.1138E+06 20.04
0.9266E-020.1261E+06 15.74
0.9644E-020.1335E+06 15.11
0.9890E-020.1377E+06 13.50
0.1059E-010.1532E+06 12.16
0.1085E-010.1592E+06 11.34
0.1120E-010.1691E+06 10.78
0.1121E-010.1738E+06 10.21
0.1153E-010.1749E+06 10.05
0.1206E-010.1936E+06 9.773
0.1229E-010.1980E+06 9.553
0.1263E-010.2083E+06 9.529
0.1280E-010.2082E+06 9.425
0.1335E-010.2175E+06 9.370
0.1375E-010.2337E+06 9.267
0.1385E-010.2305E+06 9.248
0.1406E-010.2421E+06 9.224
0.1427E-010.2459E+06 9.248
0.1460E-010.2506E+06 9.279
0.1500E-010.2620E+06 9.212
0.1512E-010.2626E+06 9.206
0.1569E-010.2862E+06 9.285
0.1584E-010.2868E+06 9.297
0.1647E-010.2961E+06 9.218
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0.1684E-010.3028E+06 9.267
0.1708E-010.3189E+06 9.230
0.1736E-010.3308E+06 9.157
0.1732E-010.3212E+06 9.261
0.1744E-010.3213E+06 9.218
0.1807E-010.3339E+06 9.297
0.1837E-010.3384E+06 9.547
0.1874E-010.3501E+06 9.913
0.1888E-010.3545E+06 9.937
0.1916E-010.3633E+06 10.32
0.1954E-010.3699E+06 10.39
0.1989E-010.3793E+06 10.44
0.2001E-010.3765E+06 10.43
0.2026E-010.3896E+06 10.61
0.2049E-010.3940E+06 10.63
0.2080E-010.3945E+06 10.94
0.2144E-010.4036E+06 11.22
0.2174E-010.4110E+06 11.28
0.2211E-010.4137E+06 11.24
0.2275E-010.4197E+06 11.58
0.2330E-010.4270E+06 11.88
0.2396E-010.4290E+06 12.19
0.2455E-010.4332E+06 12.40
0.2521E-010.4355E+06 12.83
0.2587E-010.4390E+06 13.13
0.2649E-010.4365E+06 13.96
0.2709E-010.4282E+06 15.20
0.2772E-010.4142E+06 16.21
0.2813E-010.4045E+06 16.71
0.2813E-010.4001E+06 16.92
0.2844E-010.3976E+06 17.13
0.2914E-010.3983E+06 17.67
0.2976E-010.3969E+06 18.50
0.3033E-010.3956E+06 18.75
0.3094E-010.3964E+06 18.87
0.3168E-010.3989E+06 18.93
0.3234E-010.3983E+06 19.23
0.3296E-010.3996E+06 19.45
0.3359E-010.4000E+06 19.46
0.3417E-010.4015E+06 20.90
0.3488E-010.4021E+06 20.92
0.3553E-010.4035E+06 20.97
0.3616E-010.4033E+06 20.99
0.3679E-010.4052E+06 21.01
0.3746E-010.4052E+06 20.90
0.3810E-010.4062E+06 21.00
0.3871E-010.4074E+06 20.97

8121 3 8 72 1 0.6899E+06 273.2 0.2002E+05 4.98
12-AUG-85 TOTAL HEAD SURVEY, 20 DEG FIN, BS

0.8900E-040.1753E+06 48.58
0.5850E-030.2428E+06 48.41
0.1174E-020.2466E+06 47.34
0.1848E-020.2409E+06 44.15
0.2429E-020.2358E+06 43.16
0.3096E-020.2322E+06 41.76
0.3731E-020.2279E+06 40.29
0.4367E-020.2248E+06 38.53
0.4940E-020.2201E+06 36.81
0.5599E-020.2212E+06 34.70
0.6258E-020.2196E+06 33.13
0.6793E-020.2193E+06 31.29
0.7444E-020.2217E+06 29.24
0.8157E-020.2295E+06 26.84
0.8769E-020.2345E+06 25.25
0.9404E-020.2399E+06 24.03
0.9970E-020.2457E+06 22.31
0.1079E-010.2542E+06 20.52
0.1126E-010.2686E+06 20.04
0.1164E-010.2697E+06 19.05

0.1226E-010.2808E+06 18.27
0.1259E-010.2876E+06 17.94
0.1292E-010.2910E+06 17.64
0.1347E-010.3046E+06 16.43
0.1379E-010.3068E+06 16.19
0.1439E-010.3291E+06 15.22
0.1453E-010.3283E+06 15.11
0.1524E-010.3422E+06 15.02
0.1561E-010.3555E+06 14.86
0.1571E-010.3536E+06 14.46
0.1639E-010.3646E+06 13.69
0.1666E-010.3802E+06 13.57
0.1687E-010.3736E+06 13.60
0.1704E-010.3811E+06 13.56
0.1715E-010.3827E+06 13.60
0.1777E-010.3922E+06 13.12
0.1812E-010.3982E+06 12.24
0.1840E-010.4025E+06 12.15
0.1901E-010.4073E+06 12.05
0.1965E-010.4120E+06 11.97
0.2028E-010.4134E+06 11.95
0.2094E-010.4168E+06 12.05
0.2163E-010.4174E+06 11.97
0.2222E-010.4192E+06 12.01
0.2294E-010.4191E+06 11.96
0.2355E-010.4154E+06 11.96
0.2421E-010.4042E+06 11.99
0.2445E-010.3939E+06 12.07
0.2462E-010.3968E+06 12.22
0.2498E-010.3870E+06 12.38
0.2504E-010.3878E+06 12.79
0.2563E-010.3818E+06 13.49
0.2627E-010.3796E+06 14.41
0.2687E-010.3797E+06 14.98
0.2751E-010.3813E+06 15.33
0.2814E-010.3820E+06 15.61
0.2872E-010.3823E+06 15.70
0.2938E-010.3846E+06 15.73
0.2999E-010.3866E+06 15.68
0.3060E-010.3870E+06 15.74
0.3121E-010.3862E+06 15.90
0.3192E-010.3880E+06 15.97
0.3255E-010.3905E+06 16.01
0.3315E-010.3900E+06 16.06
0.3387E-010.3896E+06 16.03
0.3444E-010.3884E+06 16.48
0.3510E-010.3890E+06 17.45
0.3575E-010.3887E+06 17.66
0.3643E-010.3901E+06 17.81
0.3704E-010.3921E+06 17.85
0.3776E-010.3949E+06 17.73
0.3839E-010.3949E+06 17.70

807 6 9 73 1 0.6889E+06 270.6 0.2030E+05 2.98
7-AUG-85 TOTAL HEAD SURVEY, 20 DEG FIN, BS

0.8900E-040.4933E+05 58.11
0.4363E-030.5485E+05 48.26
0.9302E-030.6402E+05 33.23
0.1254E-020.6928E+05 26.92
0.1563E-020.7703E+05 17.90
0.1987E-020.8410E+05 13.88
0.2234E-020.9453E+05 10.32
0.2412E-020.9772E+05 10.10
0.2690E-020.1044E+06 8.827
0.2968E-020.1118E+06 7.986
0.3338E-020.1189E+06 7.401
0.3724E-020.1252E+06 6.853
0.3870E-020.1331E+06 6.566
0.4303E-020.1397E+06 6.085
0.4627E-020.1469E+06 5.944

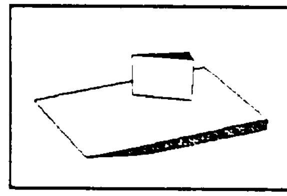
0.4889E-020.1523E+06 5.646
0.5159E-020.1567E+06 5.463
0.5838E-020.1691E+06 5.164
0.6078E-020.1759E+06 5.195
0.6548E-020.1837E+06 5.109
0.6803E-020.1880E+06 5.134
0.7405E-020.2020E+06 5.201
0.7629E-020.2110E+06 5.250
0.7814E-020.2129E+06 5.231
0.8539E-020.2192E+06 5.146
0.9072E-020.2268E+06 5.189
0.9867E-020.2234E+06 4.994
0.1035E-010.2179E+06 4.689
0.1111E-010.2158E+06 2.830
0.1170E-010.2170E+06 1.977
0.1233E-010.2268E+060.2578
0.1251E-010.2263E+060.3187
0.1327E-010.2311E+060.2151
0.1380E-010.2329E+060.2456
0.1454E-010.2346E+060.1724
0.1516E-010.2343E+060.1785
0.1582E-010.2361E+060.1724
0.1647E-010.2361E+060.2212
0.1707E-010.2368E+060.2212
0.1771E-010.2379E+060.2395
0.1818E-010.2366E+060.3248
0.1893E-010.2370E+060.2029
0.1946E-010.2366E+060.2517
0.2012E-010.2376E+060.2456
0.2065E-010.2370E+060.3126
0.2142E-010.2358E+060.2029
0.2199E-010.2362E+060.2700
0.2268E-010.2367E+060.2456
0.2320E-010.2370E+060.3309
0.2395E-010.2364E+060.2029
0.2442E-010.2360E+060.2700
0.2520E-010.2369E+060.2273
0.2569E-010.2365E+060.3248
0.2639E-010.2371E+060.2090
0.2698E-010.2358E+060.3065
0.2767E-010.2369E+060.2151
0.2831E-010.2386E+060.2334
0.2891E-010.2387E+060.3065
0.2945E-010.2377E+060.3248
0.3023E-010.2372E+060.2517
0.3073E-010.2370E+060.3614
0.3138E-010.2367E+060.3126
0.3212E-010.2372E+060.2517
0.3262E-010.2364E+060.3675
0.3332E-010.2374E+060.3431
0.3404E-010.2362E+060.2578
0.3460E-010.2365E+060.3492
0.3531E-010.2365E+060.3187
0.3584E-010.2363E+060.3431
0.3661E-010.2379E+060.2761
0.3718E-010.2372E+060.3736
0.3783E-010.2375E+060.3492
0.3847E-010.2367E+060.3248

8081 311 88 1 0.6887E+06 273.2 0.1989E+05 2.98
8-AUG-85 TOTAL HEAD SURVEY, 20 DEG FIN, BS

0.8900E-040.1616E+06 58.10
0.1586E-030.1794E+06 57.63
0.8157E-030.1750E+06 51.82
0.1450E-020.1687E+06 49.17
0.2099E-020.1646E+06 47.34
0.2764E-020.1587E+06 45.73
0.3359E-020.1576E+06 43.22
0.3970E-020.1551E+06 40.54
0.4604E-020.1583E+06 37.24

```
0.5277E-020.1642E+06 34.40
0.5895E-020.1709E+06 31.37
0.6506E-020.1834E+06 27.73
0.6807E-020.1860E+06 25.64
0.7364E-020.1940E+06 23.38
0.8013E-020.2091E+06 20.92
0.8106E-020.2150E+06 20.55
0.8717E-020.2218E+06 19.03
0.8949E-020.2263E+06 18.72
0.9281E-020.2346E+06 17.98
0.9683E-020.2413E+06 17.51
0.9985E-020.2468E+06 17.00
0.1032E-010.2562E+06 16.76
0.1046E-010.2588E+06 16.34
0.1065E-010.2667E+06 15.97
0.1110E-010.2719E+06 15.51
0.1131E-010.2806E+06 15.41
0.1169E-010.2896E+06 15.37
0.1177E-010.2924E+06 15.31
0.1221E-010.3041E+06 14.93
0.1222E-010.2999E+06 14.77
0.1267E-010.3165E+06 14.24
0.1282E-010.3197E+06 14.16
0.1313E-010.3340E+06 14.07
0.1319E-010.3295E+06 13.97
0.1343E-010.3383E+06 13.64
0.1356E-010.3429E+06 13.51
0.1366E-010.3446E+06 13.23
0.1428E-010.3651E+06 13.11
0.1444E-010.3638E+06 13.06
0.1513E-010.3836E+06 12.07
0.1524E-010.3824E+06 11.74
0.1590E-010.3897E+06 11.53
0.1657E-010.4039E+06 11.49
0.1685E-010.4044E+06 11.49
0.1745E-010.4066E+06 11.59
0.1804E-010.4047E+06 11.64
0.1876E-010.3940E+06 11.62
0.1909E-010.3927E+06 11.57
0.1961E-010.3848E+06 12.47
0.2031E-010.3832E+06 14.18
0.2102E-010.3814E+06 15.48
0.2165E-010.3845E+06 16.08
0.2225E-010.3868E+06 16.36
0.2289E-010.3882E+06 16.76
0.2347E-010.3894E+06 16.82
0.2407E-010.3887E+06 17.05
0.2482E-010.3887E+06 17.31
0.2534E-010.3878E+06 17.61
0.2598E-010.3909E+06 17.88
0.2661E-010.3954E+06 18.38
0.2730E-010.3947E+06 18.58
0.2797E-010.3975E+06 18.79
0.2848E-010.3978E+06 18.94
0.2910E-010.3975E+06 18.87
0.2973E-010.3990E+06 18.89
0.3044E-010.3991E+06 18.92
0.3103E-010.3973E+06 19.14
0.3165E-010.3994E+06 19.23
0.3237E-010.3996E+06 19.30
0.3291E-010.3990E+06 19.42
0.3371E-010.3995E+06 19.31
0.3429E-010.4000E+06 19.38
0.3490E-010.4001E+06 19.42
0.3550E-010.4013E+06 19.46
0.3627E-010.4032E+06 19.41
0.3688E-010.4073E+06 19.45
0.3748E-010.4086E+06 19.65
0.3823E-010.4116E+06 19.96
0.3872E-010.4136E+06 20.39
0.3942E-010.4126E+06 20.45
0.4007E-010.4148E+06 20.55
0.4072E-010.4125E+06 20.53
0.4140E-010.4128E+06 20.37
0.4200E-010.4104E+06 20.40
0.4276E-010.4101E+06 20.33
0.4330E-010.4124E+06 20.42
0.4395E-010.4129E+06 20.36
0.4468E-010.4133E+06 20.29

******************************************************************************

PART TWO

******************************************************************************

20 DEGREE FIN DATA - SURFACE PRESSURES

PO=100 PSI

FREESTREAM MACH NUMBER=2.93

******************************************************************************

FORMAT OF DATA:

Z(CM)  NUM. OF POINTS
X   PS/PINF

X IN CM, PS/PINF IS SURFACE PRESSURE DIVIDED BY FREESTREAM STATIC PRESSURE

***********************SURFACE PRESSURE DATA*********************************

3.56  18

0.3  1.01
1.4  1.02
2.1  1.62
2.4  1.73
2.7  1.81
3.0  1.85
3.3  1.90
3.6  1.89
3.9  1.84
4.2  1.81
4.5  1.80
4.8  1.82
5.7  2.35
6.4  2.64
7.1  3.07
7.7  3.32
8.3  3.54
8.9  3.77

_______________

6.10  21

0.6  1.00
1.2  0.99
1.8  0.98
2.4  0.99
3.0  0.98
3.3  1.03
3.9  1.31
5.0  1.78
5.6  1.90
6.2  1.93
6.8  1.89
7.4  1.83
8.0  1.87
8.9  2.08
9.5  2.34
10.1  2.35
10.7  2.95
11.3  3.21
12.2  3.38
13.1  3.48
13.7  3.50

_______________

8.64  18

2.0  1.00
2.9  1.00
3.8  1.00
5.0  1.00
6.3  1.63
8.2  1.95
9.5  1.96
10.1  1.97
10.8  1.94
11.4  1.90
12.1  1.99
12.7  2.06
13.3  2.30
14.0  2.52
14.7  2.82
15.4  3.10
16.2  3.22
16.8  3.24

***************************END OF FILE*********************************
```

Ref.: 46
Author: Kim, K-S, *et al*
Geometry: 3-D Fin
Mach number: 3, 4
Data: p_{wall}, c_f, surface-flow angles



Kim, K-S, and Settles, G. S., "Skin Friction Measurements by Laser Interferometry in Swept Shock/ Turbulent Boundary-Layer Interactions," AIAA Paper 88-0497, Jan. 1988, and *AIAA Journal*, Vol. 28, Jan. 1990, pp. 133-139.

Kim, K-S., Lee, Y., Alvi, F. S., Settles, G. S., and Hortsman, C. C., "Laser Skin Friction Measurements and CFD Comparison of Weak-to-Strong Swept Shock/Boundary Layer Interactions," AIAA Paper 90-0378.

Kim, K.-S., and Settles, G. S., "Skin Friction Measurements by Laser Interferometry," Ch. 3 of AGARDograph No. 315, A Survey of Measurements and Measuring Techniques in Rapidly Distorted Compressible Turbulent Boundary Layers, eds. H. H. Fernholz, A. J. Smits, and J.-P. Dussauge, November 1988.

Kim, K.-S., "Skin Friction Measurements by Laser Interferometry in Supersonic Flows," Ph.D. Dissertation, M.E. Dept., Penn State University, May 1989.

(Incoming Boundary-Layers:)
Lu, F. K., "Fin-Generated Shock-Wave Boundary-Layer Interactions," Ph.D. Dissertation, M.E. Dept., Penn State University, May 1988.

The data consist of measured surface pressure, skin friction, and surface flow angles from sharp-fin-induced shock wave/turbulent boundary-layer interactions tested at Mach 3 and Mach 4 in the Penn State Gas Dynamics Laboratory over the period 1985-1990. Tabulated flat-plate incoming boundary-layer profiles are also given. The geometry consisted of a sharp, unswept-leading-edge fin mounted at angle-of-attack alpha to the freestream, with its leading-edge 216 mm downstream from the leading edge of a flat plate upon which the turbulent boundary layer was generated.

Assessments of the confidence limits placed on these data are as follows:

1) Skin Friction Distributions

Each reported skin friction point is an ensemble of several experimental tests. The tolerances reported here reflect the repeatability of the measurement, and are stated in terms of one standard deviation from the mean. No absolute accuracy statement can be made, since there exists no prior knowledge of skin friction in such interacting flows and no other means of measuring it accurately for comparison. However, based on experience with a flat-plate boundary layer calibration (AGARDograph

315 mentioned above), the authors believe that the given tolerances also represent the accuracy of the data, since repeatability error appears to be the largest of the several possible error sources.

2) Surface Streamline Angles

These data were extracted by hand from kerosene-lampblack surface flow visualization patterns using a protractor. Due to inherent errors in this process, these data are believed to carry an overall accuracy of $\pm$ 5%.

3) Surface Pressure Distributions

These data were obtained in late 1989/early 1990 by S. Garg and Y. Lee and remain unpublished at this writing. An extensive error analysis has been performed. First, a weak streamwise pressure gradient which existed on the flat plate with no fin in place has been removed from the data prior to their tabulation here. Otherwise, errors due to electronic noise, repeatability, and calibration uncertainty are believed to be within the range of $\pm$ 3%.

The skin friction values tabulated below are given as cf vs. beta, where cf is the skin friction coefficient defined as the absolute value (magnitude) of the wall shear stress normalized by the undisturbed freestream dynamic pressure. Beta is defined as the conical ray angle, measured from the fin leading edge, with respect to the freestream direction. For each of 4 combinations of fin angle and Mach number, Laser Interferometer Skin Friction (LISF) data were taken along a single circular arc at radius R from the fin leading edge. R was 114 mm (4.5 inches) in the case of Mach 3, alpha = 10 deg. For the other three cases, R was 89 mm (3.5 inches). The angle beta is given in degrees below. The error bars are given without sign, and are one-sided rather than total error estimates (ie, for the first data point given below, cf = 0.001118 $\pm$ 0.00002634).

The surface streamline angle values given below represent the local angles of surface flow pattern streamlines, phi, measured with respect to the freestream direction, vs. the conical ray angle beta. All values are in degrees.

The surface pressure data tabulated below were read from pressure taps arranged along a circular-arc segment at radius R = 101.6 mm (4 inches) from the fin leading edge. The pressure data are given in normalized form, *ie* Pw/Pinfinity, where Pw is the measured wall pressure and Pinfinity is the undisturbed flat-plate surface pressure measured at the upstream limit of the interaction. Angles beta and alpha are in degrees.

The incoming boundary-layer profiles given are largely self-explanatory. Tabulated values of UPLUS and YPLUS refer to the transformed incompressible wall-wake coordinates of the profile, which were obtained by way of a least-squares curvefit of the wall-wake similarity law to the boundary-layer profile after having transformed it to the incompressible plane by way of the Van Driest transformation.

Ongoing work on this interaction at the Penn State Gas Dynamics Lab is expected to produce additional data within the near future. These data will include heat transfer distributions and flowfield density profiles via conical holographic interferometry.

SHARP FIN SHOCK/BL INTERACTION DATA - PENN STATE GAS DYNAMICS LAB

FREESTREAM CONDITIONS:

Mach number 3.03 (Mach 3)
stagnation pressure 120 psia (827 kPa)
stagnation temperature 294 K
Reynolds number 6.19E+07/m
Tw/Taw = 1.06 (roughly adiabatic)

Mach number 3.98 (Mach 4)
stagnation pressure 221 psia (1524 kPa)
stagnation temperature 293 K
Reynolds number 6.79E+07/m
Tw/Taw = 1.06 (roughly adiabatic)

INCOMING BOUNDARY LAYER PARAMETERS AT X=178 mm FROM FLAT-PLATE LEADING EDGE

Mach 3 (actual freestream Mach number was 2.91 for this survey)
Delta = 3.02 mm
Delta* = 0.895 mm
Theta = 0.184 mm
Cf = 0.001520
Re(theta) = 9751

Mach 4 (actual freestream Mach number was 3.88 for this survey)
Delta = 2.87 mm
Delta* = 0.950 mm
Theta = 0.128 mm
Cf = 0.001325
Re(theta) = 9082

(See also tabulations of these b.l. profiles at the end of this section)

TABULATED DATA

1) SKIN FRICTION

MACH 3, ALPHA = 10 DEGREES

BETA	CF	ERROR BAR
45.00	1.118E-3	2.634E-5
39.00	1.118E-3	2.634E-5
37.50	1.268E-3	6.5955-5
34.00	1.213E-3	3.858E-5
32.00	9.775E-4	2.269E-5
30.00	9.705E-4	2.557E-5
28.00	1.121E-3	6.740E-5
24.00	1.837E-3	1.082E-4
18.00	2.406E-3	2.506E-4
15.00	2.511E-3	2.074E-4
13.00	2.455E-3	2.511E-4
11.00	2.288E-3	1.740E-4

MACH 3, ALPHA = 16 DEGREES

BETA	CF	ERROR BAR
54.00	1.118E-3	2.634E-5
49.00	1.118E-3	2.634E-5
47.50	1.189E-3	3.194E-5
45.00	1.110E-3	5.539E-5
43.00	1.193E-3	3.522E-5
40.00	1.457E-3	5.376E-5
37.10	1.647E-3	5.385E-5
34.00	2.000E-3	1.012E-4
30.00	3.321E-3	1.911E-4
24.00	4.191E-3	1.929E-4
20.00	3.918E-3	2.366E-4
17.00	3.077E-3	1.931E-4

MACH 4, ALPHA = 16 DEGREES

BETA	CF	ERROR BAR
50.00	9.702E-4	7.040E 5
44.00	9.414E-4	8.600E 6
42.20	1.083E-3	7.470E 5
41.00	1.011E-3	4.590E 5
37.00	1.020E-3	6.390E-5
33.60	1.662E-3	8.720E 5
32.60	1.310E-3	6.080E-5
27.00	2.465E-3	1.820E-4
23.00	5.333E-3	4.289E-4
19.20	5.699E-3	5.301E-4
17.00	4.228E-3	4.281E-4

MACH 4, ALPHA = 20 DEGREES

BETA	CF	ERROR BAR
56.00	9.868E-4	2.774E-5
51.00	9.835E-4	4.131E-5
48.80	1.114E-3	4.380E-5
44.00	1.199E-3	4.645E-5
40.50	1.820E-3	8.979E-5
39.50	1.655E-3	3.913E-5
31.00	2.649E-3	9.820E-5
26.30	9.494E-3	6.718E-4
23.30	7.733E-3	5.920E-4
21.00	5.749E-3	4.377E-4

2) SURFACE STREAMLINE ANGLES

MACH 3, ALPHA = 10 DEGREES

BETA	PHI
39.0	0.0
37.5	5.5
36.0	17.5
34.0	21.5
32.0	30.0
30.0	29.0
28.0	31.0
24.0	38.4
18.0	28.5
15.0	17.3
13.0	12.0
11.0	10.5

MACH 3, ALPHA = 16 DEGREES

BETA	PHI
49.0	0.0
47.5	30.6
45.0	43.5
43.0	47.0
40.0	49.0
37.1	37.0
34.0	47.5
30.0	58.5
27.0	56.5
24.0	44.5
23.0	29.0
20.0	19.5
17.0	16.0

MACH 4, ALPHA = 16 DEGREES

BETA	PHI
44.0	0.0
42.2	35.3
41.0	40.8
37.0	45.0
33.6	40.0
32.6	32.8
29.0	43.9
27.0	49.6
25.0	55.4
23.0	50.5
21.0	31.7
19.2	22.6
17.0	16.0

MACH 4, ALPHA = 20 DEGREES

BETA	PHI
49.5	0.0
48.8	45.5

44.0	52.8
40.5	44.1
39.5	40.2
37.0	46.1
33.0	53.5
31.0	66.2
29.0	65.3
26.3	45.6
25.0	34.5
23.3	26.7
21.0	20.0

3) SURFACE PRESSURES

	Pw/Pinfinity			
	M = 3.0	M = 3.0	M = 4.0	M = 4.0
BETA	ALPHA=10	ALPHA=16	ALPHA=16	ALPHA=20
14.0	1.931	----	----	----
16.0	1.905	----	----	----
18.0	1.844	2.991	4.058	----
20.0	1.708	2.932	4.165	----
22.0	1.608	3.057	3.324	5.050
24.0	1.517	2.933	2.177	5.534
26.0	1.476	2.382	1.568	4.804
28.0	1.456	1.830	1.493	2.520
30.0	1.463	1.630	1.631	1.579
32.0	1.405	1.580	1.820	1.508
34.0	1.310	1.658	1.835	1.742
36.0	1.190	1.763	1.773	1.862
40.0	1.006	1.707	1.584	2.005
44.0	1.005	1.577	1.022	1.878
47.5	0.999	1.183	0.996	1.701
50.0	1.005	1.009	1.000	1.376
52.5	0.996	1.002	1.000	1.005
56.0	1.000	1.001	1.000	1.004
58.0	1.000	0.999	1.000	0.999

INCOMING BOUNDARY-LAYER PROFILES

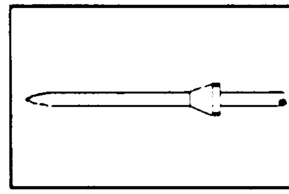
MACH 3 (2.91)
RUN NO.: 1177
X, Z = 0.178, 0.040 m — RECOVERY FACTOR = 0.89
M1 = 2.909 — REN1 = 0.52912E+08 /m
U1 = 601.07 m/s — PW = 20.167 kPa
PT0 = 745.86 kPa — PT1 = 227.60 kPa
T1 = 106.2 K — TT01 = 289.7 K
RHO1 = 0.656 kg/m3 — PI = 0.8882
(Edge criterion is UE = 0.999 * U1)

I	Y, mm	Y/DELTA	MACH NO.	U/UE	RHO/RHOE	T/TTE	YPLUS	UPLUS
1	1.194	0.382	2.059	0.8667	0.6703	0.5411	0.6039E+03	22.4711
2	1.219	0.391	2.075	0.8698	0.6756	0.5374	0.6167E+03	22.5666
3	1.270	0.407	2.105	0.8763	0.6851	0.5302	0.6424E+03	22.7667
4	1.346	0.431	2.158	0.8871	0.6979	0.5178	0.6810E+03	23.1034
5	1.422	0.456	2.182	0.8921	0.7035	0.5121	0.7195E+03	23.2611
6	1.499	0.480	2.221	0.9000	0.7137	0.5033	0.7581E+03	23.5115
7	1.524	0.488	2.249	0.9058	0.7273	0.4971	0.7709E+03	23.6963
8	1.575	0.504	2.267	0.9089	0.7441	0.4930	0.7966E+03	23.7984
9	1.600	0.513	2.286	0.9122	0.7534	0.4890	0.8095E+03	23.9041
10	1.676	0.537	2.348	0.9235	0.7727	0.4757	0.8480E+03	24.2708
11	1.753	0.561	2.367	0.9264	0.7832	0.4716	0.8866E+03	24.3648
12	1.803	0.578	2.404	0.9327	0.7946	0.4638	0.9123E+03	24.5726
13	1.905	0.610	2.482	0.9451	0.8189	0.4481	0.9636E+03	24.9850
14	2.032	0.651	2.526	0.9522	0.8300	0.4393	0.1028E+04	25.2272
15	2.083	0.667	2.548	0.9552	0.8389	0.4351	0.1054E+04	25.3295
16	2.159	0.692	2.605	0.9639	0.8704	0.4242	0.1092E+04	25.6246
17	2.210	0.708	2.649	0.9702	0.8883	0.4161	0.1118E+04	25.8432
18	2.235	0.716	2.650	0.9702	0.8949	0.4159	0.1131E+04	25.8451
19	2.388	0.765	2.689	0.9757	0.9113	0.4088	0.1208E+04	26.0341
20	2.413	0.773	2.709	0.9783	0.9172	0.4051	0.1221E+04	26.1266
21	2.464	0.789	2.710	0.9781	0.9206	0.4051	0.1246E+04	26.1201
22	2.489	0.797	2.741	0.9821	0.9313	0.3996	0.1259E+04	26.2606
23	2.565	0.822	2.773	0.9864	0.9386	0.3940	0.1298E+04	26.4111
24	2.616	0.838	2.795	0.9890	0.9421	0.3903	0.1323E+04	26.5032
25	2.667	0.854	2.814	0.9914	0.9533	0.3871	0.1349E+04	26.5919
26	2.743	0.879	2.851	0.9963	0.9661	0.3808	0.1388E+04	26.7673
27	2.896	0.928	2.862	0.9977	0.9871	0.3791	0.1465E+04	26.8165
28	2.972	0.952	2.873	0.9990	0.9891	0.3772	0.1503E+04	26.8643
29	3.023	0.968	2.881	0.9995	0.9971	0.3759	0.1529E+04	26.8821
30	3.122	1.000	2.897	1.0000	1.0000	0.3747	0.1579E+04	26.9006
31	3.150	1.009	2.890	1.0005	0.9999	0.3744	0.1593E+04	26.9199
32	3.251	1.041	2.898	1.0011	1.0009	0.3732	0.1645E+04	26.9394
33	3.327	1.066	2.882	0.9988	1.0010	0.3758	0.1683E+04	26.8562
34	3.378	1.082	2.903	1.0013	1.0003	0.3724	0.1709E+04	26.9474
35	3.429	1.098	2.893	0.9998	0.9963	0.3740	0.1735E+04	26.8931
36	3.505	1.123	2.885	0.9983	1.0008	0.3753	0.1773E+04	26.8402
37	3.556	1.139	2.884	0.9978	0.9947	0.3754	0.1799E+04	26.8192
38	3.581	1.147	2.884	0.9977	0.9949	0.3754	0.1812E+04	26.8157
39	3.632	1.164	2.874	0.9960	0.9942	0.3771	0.1837E+04	26.7551
40	3.734	1.196	2.885	0.9972	0.9891	0.3753	0.1889E+04	26.7991
41	3.810	1.220	2.909	1.0000	1.0000	0.3715	0.1927E+04	26.9006

MACH 4 (3.88)
RUN NO.: 5200
X, Z = 0.178, 0.000 m — RECOVERY FACTOR = 0.89
M1 = 3.876 — REN1 = 0.70880E+08 /m
U1 = 647.34 m/s — PW = 10.483 kPa
PT0 = 1400.40 kPa — PT1 = 206.50 kPa
T1 = 69.4 K — TT01 = 286.2 K
RHO1 = 0.523 kg/m3 — PI = 0.65
(Edge criterion is UE = 0.999 * U1)

I	Y, mm	Y/DELTA	MACH NO.	U/UE	RHO/RHOE	T/TTE	YPLUS	UPLUS
1	0.432	0.150	2.034	0.7961	0.4419	0.5471	0.1987E+03	18.5542
2	0.533	0.186	2.172	0.8235	0.4769	0.5146	0.2455E+03	19.3158
3	0.635	0.221	2.281	0.8435	0.5114	0.4901	0.2923E+03	19.8870
4	0.737	0.256	2.364	0.8567	0.5256	0.4722	0.3390E+03	20.2712
5	0.838	0.292	2.413	0.8640	0.5456	0.4620	0.3858E+03	20.4872
6	0.940	0.327	2.473	0.8724	0.5620	0.4498	0.4325E+03	20.7403
7	1.041	0.362	2.570	0.8863	0.5804	0.4308	0.4793E+03	21.1627
8	1.245	0.433	2.722	0.9064	0.6223	0.4030	0.5728E+03	21.7902
9	1.448	0.504	2.865	0.9237	0.6641	0.3785	0.6664E+03	22.3488
10	1.651	0.575	3.035	0.9420	0.7165	0.3519	0.7599E+03	22.9565
11	1.854	0.645	3.181	0.9561	0.7641	0.3307	0.8534E+03	23.4427
12	2.057	0.716	3.325	0.9682	0.8140	0.3115	0.9469E+03	23.8690
13	2.286	0.796	3.495	0.9815	0.8751	0.2905	0.1052E+04	24.3530
14	2.489	0.866	3.622	0.9899	0.9240	0.2760	0.1146E+04	24.6681
15	2.667	0.928	3.744	0.9973	0.9729	0.2629	0.1228E+04	24.9528
16	2.870	0.999	3.805	1.0000	0.9996	0.2567	0.1321E+04	25.0539
17	2.874	1.000	3.834	1.0000	1.0000	0.2566	0.1323E+04	25.0556
18	3.073	1.070	3.845	1.0037	0.9829	0.2528	0.1415E+04	25.2006
19	3.277	1.140	3.867	1.0034	0.9951	0.2506	0.1508E+04	25.1883
20	3.454	1.202	3.874	1.0019	1.0019	0.2499	0.1590E+04	25.1287
21	3.658	1.273	3.876	1.0000	1.0000	0.2497	0.1683E+04	25.0556

Ref.: 13, 27
Author: Dunagan, S. E., Brown, J. L., *et al*
Geometry: Axisymmetric Ogive-Cylinder-Flare
Mach number: 3
Data: p_{wall}, flowfield surveys (LDV and holographic interferometry)



Brown, J.L., Kussoy, M.I. and Coakley, T.J., "Turbulent Properties of Axisymmetric Shock-Wave/Boundary- Layer Interaction Flows," *Turbulent Shear-Layer/Shock-Wave Interactions*, edited by Delery, J., Springer-Verlag, Berlin, 1986, pp. 137-148.

Dunagan, S.E., Brown, J.L. and Miles, J.B., "Interferometric Data for a Shock-Wave/ Boundary-Layer Interaction," *NASA TM 88227*, 1986.

The data tabulated here and much of this discussion were provided by Dr. James L. Brown of NASA-Ames Research Center, who invites users to contact him if questions should arise. Supersonic flow over an axisymmetric ogive-cylinder-flare body was investigated by non-intrusive optical instrumentation as described below. Shock-induced separation on this model produced large-scale unsteady fluid motion.

INSTRUMENTS:

Instruments used included a 2D laser velocimeter using 0.55 micron polystyrene seed particles. The particle lag with this size particle is not entirely negligible but was felt to be acceptable with the shock and other velocity gradients being spread by about 0.5 cm in the *streamwise* direction. Other supersonic LV experiments have been reported with seed particles as large as 2 microns.

Another instrument used in these experiments was a Holographic Interferometer to obtain density measurements. With appropriate normal pressure gradient assumptions and a temperature-velocity relationship, density profiles may also be derived from the LV velocity data. Except for those regions, such as near the shock, where particle lag exists, these LV-derived density profiles agree quite well with the Holographic Interferometer-obtained density profiles.

EXPERIMENTAL CONDITIONS:

Freestream conditions are:

1.7 atmosphere	total pressure
270 degree K	total temperature
2.85	Mach number
1.928	M^*, the freestream velocity normalized by the acoustic velocity at Mach 1
18,000,000	unit Reynolds number per meter

The oncoming boundary layer is developed on a 1 m long cylinder of 5.08 cm diameter (axis aligned with the free stream flow) and has (just prior to the shock/boundary layer interaction):

1.1 cm boundary layer thickness,
0.33 cm Compressible Displacement Thickness (includes density variation),
0.12 cm Incompressible Displacement Thickness(no density variation considered)

The shock/boundary layer interaction is generated by an axisymmetric cone placed on the 1 m long cylinder. Two cases are presented in the cited References:

a. 12.5 degree axisymmetric cone on a 1 meter long cylinder.
   (This case is unseparated and has a steady shock)
b. 30 degree axisymmetric cone on a 1 meter long cylinder.
   (This case is separated and has an unsteady shock)

Given the large quantity of data represented, the desire for reasonable brevity in this Report, and the greater interest in the separated-flow case, only the 30 degree case is tabulated below.

The velocity measurements were made and are reported in the cartesian XY coordinate system, where X is parallel both to the cylinder axis and to freestream velocity. X = 0 at the cone/cylinder intersection. R is the radial distance from the cylinder axis. Y is the radial distance from the cylinder or cone surface.

The data tables include surface pressure and compressible displacement thickness distributions, as well as velocity-profile laser velocimeter measurements (vs. Y - distance from cylinder or cone surface) at the several X-stations where profiles were obtained for the 30 degree axisymmetric cone case.

For each X-station are given:

X - X location of the profile in cm.
R_surface - Radius of the local surface in cm.
Npts - number of points in the profile
Date - Date data was taken (e.g., 5/31/85)
Pwall/PT1 - wall pressure/free stream total pressure data is interpolated from the surface pressure table if required.
Theta - local slope of the Compressible Displacement Surface given by Dstar + R_surface. Dstar is obtainable from another table. The Compressible Displacement Thickness accounts for the velocity *and* density variation across the boundary layer.

Profiles at each X-station include:

Y - distance from the local surface (R=Y+R_surface) in cm.
UMEAN - Mean X component of the velocity normalized by the acoustic velocity at Mach 1.
VMEAN - Mean Y component of the velocity normalized by the acoustic velocity at Mach 1.
U2 - (Sum(U - UMEAN)**2)/N and normalized by the square of the acoustic velocity at Mach 1.
A Turbulent NORMAL stress in the XY coordinate system.

V2 - (Sum(V - VMEAN)**2)/N and normalized by the square of the acoustic velocity at Mach 1.
A Turbulent NORMAL stress in the XY coordinate system.

UV - (Sum(U - UMEAN)*(V - VMEAN))/N and normalized by the square of the acoustic velocity at Mach 1.
A Turbulent SHEAR stress in the XY coordinate system.

Gminus - The fraction of the U velocity measurements that were negative.

Data tables are also given of density profile measurements (vs. R - distance from the cylinder or cone axis) at the several X-stations where profiles were obtained for the 30 degree axisymmetric cone case.

ERROR ASSESSMENT:

Mean Velocity measurements are subject to errors typically 0.01 times freestream velocity plus 0.1 times sqrt(K), where K = 0.5*(U2 + V2 + W2), the turbulence kinetic energy, and where W2 is assumed to equal 0.5*(U2+V2).

Turbulence normal stress measurements are subject to errors typically 0.1 times K, the measured turbulence kinetic energy.

Turbulence *shear* stress measurements are subject to errors typically 0.05 times K, the measured turbulence kinetic energy.

Particle lag effects will always be present with laser velocimetry in supersonic flows, particularly with a shock present. Examinations of histograms obtained through a shock in the freestream demonstrate the 0.55 micron particles used were monodisperse. The primary effect of the particle lag is not entirely understood but appears to be to spread the velocity (mean and turbulence) gradients by about 0.5cm in the *streamwise* direction.

Errors in the density measurements are greatest at the cylinder or cone surface since an Abel transform inversion is required to deduce the density from the measured fringes. Typical errors in density appeared to be about 10 percent.

A *rational* theoretical error analysis on the various measurements invariably gives much smaller error bounds than given above. The above error bounds are based on *experience* with the data, guided by theoretical considerations and by appropriate cross-checks.

**************Dunagan & Brown Axisymmetric Ogive-Cyl Flare Data*************

********************Surface Pressure Distribution*************************
********************30 degree cone, Experiment****************************

X cm	P/PT
-4.250,	0.0341
-3.250,	0.0341
-2.750,	0.0449
-2.250,	0.0596
-1.750,	0.0608
-1.250,	0.0694
0.433,	0.0773
0.866,	0.0873
1.299,	0.0985
1.732,	0.1091
2.165,	0.1197
2.598,	0.1287
3.031,	0.1348
3.464,	0.1409
3.897,	0.1451
4.330,	0.1495
4.763,	0.1511
5.396,	0.0393
5.896,	0.0375
6.396,	0.0368
7.396,	0.0360
8.396,	0.0349
9.396,	0.0338
10.396,	0.0333

***********************Compressible Displacement Thickness*******************
*************************30 degree cone, Experiment*************************

X cm	Delta* cm
-4.5000E+00	2.9651E-01
-3.5000E+00	2.8029E-01
-3.0000E+00	3.1353E-01
-2.5000E+00	3.4202E-01
-2.0000E+00	4.1526E-01
-1.5000E+00	5.0897E-01
-1.0000E+00	6.3178E-01
-5.0000E-01	7.3543E-01
0.0000E+00	8.4225E-01
4.3300E-01	6.6259E-01
8.6600E-01	5.4388E-01
1.7321E+00	3.8406E-01
2.5981E+00	3.1217E-01
3.4641E+00	2.5515E-01
4.3301E+00	1.9968E-01
4.7631E+00	1.6624E-01
5.1962E+00	1.3350E-01
5.8962E+00	1.7140E-01
6.3962E+00	1.9252E-01
7.3962E+00	1.7610E-01
8.3962E+00	1.5677E-01
9.3962E+00	1.2850E-01

****
LDV VELOCITY PROFILE DATA
****

MODEL CONE ANGLE = 30.0 Degrees
TOTAL PRESSURE = 1.7 Atmospheres
TOTAL TEMPERATURE = 270 K

X(cm) =-4.5000 R_SURFACE = 2.5400 Npts = 22 OBTAINED 6/19/85
Pwall/PT1 = 0.0341 Theta = 0.0

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	1.4165	-.0012	.157E-01	.763E-02	-.395E-02	.0000
.102	1.4862	.0005	.128E-01	.715E-02	-.358E-02	.0000
.152	1.5386	.0030	.111E-01	.659E-02	-.315E-02	.0000
.203	1.5821	.0045	.101E-01	.600E-02	-.301E-02	.0000
.254	1.6126	.0091	.947E-02	.555E-02	-.292E-02	.0000
.317	1.6615	.0080	.864E-02	.511E-02	-.268E-02	.0000
.381	1.7029	.0072	.786E-02	.472E-02	-.251E-02	.0000
.444	1.7386	.0085	.714E-02	.432E-02	-.227E-02	.0000
.508	1.7745	.0089	.628E-02	.377E-02	-.199E-02	.0000
.572	1.8073	.0077	.549E-02	.334E-02	-.168E-02	.0000
.635	1.8382	.0088	.453E-02	.275E-02	-.133E-02	.0000
.698	1.8580	.0093	.348E-02	.210E-02	-.893E-03	.0000
.762	1.8815	.0095	.254E-02	.167E-02	-.646E-03	.0000
.825	1.8966	.0123	.197E-02	.141E-02	-.461E-03	.0000
.889	1.9128	.0125	.130E-02	.104E-02	-.215E-03	.0000
1.016	1.9257	.0168	.677E-03	.639E-03	-.393E-04	.0000
1.143	1.9290	.0172	.514E-03	.527E-03	.261E-04	.0000
1.270	1.9308	.0159	.462E-03	.485E-03	.545E-04	.0000
1.397	1.9284	.0163	.435E-03	.449E-03	.350E-04	.0000
1.524	1.9259	.0153	.434E-03	.446E-03	.522E-04	.0000
1.778	1.9213	.0111	.440E-03	.451E-03	.601E-04	.0000
2.032	1.9194	.0126	.418E-03	.430E-03	.408E-04	.0000

X(cm) =-3.5000 R_SURFACE = 2.5400 Npts = 22 OBTAINED 6/20/85
Pwall/PT1 = 0.0341 Theta = 0.0

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	1.4255	-.0028	.137E-01	.836E-02	-.361E-02	.0000
.102	1.4988	.0016	.111E-01	.742E-02	-.329E-02	.0000
.152	1.5492	.0044	.104E-01	.646E-02	-.306E-02	.0000
.203	1.5972	.0062	.954E-02	.630E-02	-.285E-02	.0000
.254	1.6357	.0078	.879E-02	.589E-02	-.260E-02	.0000
.317	1.6752	.0096	.799E-02	.506E-02	-.247E-02	.0000
.381	1.7150	.0092	.707E-02	.465E-02	-.214E-02	.0000
.444	1.7523	.0082	.633E-02	.434E-02	-.192E-02	.0000
.508	1.7911	.0076	.540E-02	.354E-02	-.147E-02	.0000
.572	1.8178	.0067	.469E-02	.312E-02	-.127E-02	.0000
.635	1.8468	.0098	.377E-02	.250E-02	-.100E-02	.0000
.698	1.8708	.0081	.283E-02	.191E-02	-.721E-03	.0000
.762	1.8921	.0086	.205E-02	.148E-02	-.451E-03	.0000
.825	1.9057	.0116	.149E-02	.114E-02	-.237E-03	.0000
.889	1.9174	.0137	.111E-02	.916E-03	-.141E-03	.0000
1.016	1.9289	.0169	.593E-03	.580E-03	.380E-05	.0000
1.143	1.9304	.0167	.469E-03	.482E-03	.336E-04	.0000
1.270	1.9302	.0107	.446E-03	.467E-03	.574E-04	.0000
1.397	1.9269	.0071	.419E-03	.437E-03	.417E-04	.0000
1.524	1.9268	.0094	.404E-03	.420E-03	.421E-04	.0000
1.778	1.9242	.0065	.403E-03	.422E-03	.442E-04	.0000
2.032	1.9205	.0014	.384E-03	.403E-03	.417E-04	.0000

X(cm) =-3.0000 R_SURFACE = 2.5400 Npts = 22 OBTAINED 6/19/85
Pwall/PT1 = 0.0395 Theta = 3.0

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	1.3377	.0078	.383E-01	.146E-01	-.454E-02	.0008
.102	1.4497	.0101	.227E-01	.108E-01	-.487E-02	.0001
.152	1.5111	.0124	.163E-01	.904E-02	-.444E-02	.0001
.203	1.5634	.0148	.131E-01	.773E-02	-.444E-02	.0000
.254	1.6149	.0079	.110E-01	.691E-02	-.381E-02	.0000
.317	1.6548	.0109	.880E-02	.572E-02	-.317E-02	.0000
.381	1.6948	.0123	.776E-02	.502E-02	-.266E-02	.0000

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.444	1.7301	.0120	.688E-02	.435E-02	-.230E-02	.0000
.508	1.7633	.0102	.619E-02	.407E-02	.207E-02	.0000
.572	1.7953	.0085	.527E-02	.340E-02	-.170E-02	.0000
.635	1.8272	.0097	.453E-02	.288E-02	-.141E-02	.0000
.698	1.8536	.0114	.332E-02	.219E-02	-.892E-03	.0000
.762	1.8731	.0076	.263E-02	.178E-02	-.656E-03	.0000
.825	1.8927	.0073	.188E-02	.136E-02	-.378E-03	.0000
.889	1.9045	.0119	.144E-02	.110E-02	-.228E-03	.0000
1.016	1.9222	.0119	.732E-03	.699E-03	-.322E-05	.0000
1.143	1.9263	.0095	.511E-03	.532E-03	.482E-04	.0000
1.270	1.9276	.0076	.479E-03	.494E-03	.692E-04	.0000
1.397	1.9258	.0076	.432E-03	.454E-03	.573E-04	.0000
1.524	1.9256	.0052	.434E-03	.452E-03	.698E-04	.0000
1.778	1.9256	-.0012	.439E-03	.452E-03	.577E-04	.0000
2.032	1.9210	-.0025	.401E-03	.431E-03	.312E-04	.0000

X(cm) =-2.5000 R_SURFACE = 2.5400 Npts = 22 OBTAINED 6/19/85
Pwall/PT1 = 0.0524 Theta = 5.8

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	1.0331	.0063	.145E+00	.427E-01	-.237E-02	.0167
.102	1.2504	.0307	.863E-01	.298E-01	-.467E-02	.0031
.152	1.3663	.0496	.563E-01	.215E-01	-.659E-02	.0008
.203	1.4575	.0577	.368E-01	.163E-01	-.908E-02	.0003
.254	1.5143	.0565	.297E-01	.135E-01	-.101E-01	.0001
.317	1.5918	.0465	.197E-01	.108E-01	-.842E-02	.0000
.381	1.6512	.0362	.144E-01	.881E-02	-.681E-02	.0000
.444	1.7021	.0252	.109E-01	.719E-02	-.536E-02	.0000
.508	1.7429	.0190	.897E-02	.568E-02	-.409E-02	.0000
.572	1.7870	.0090	.607E-02	.399E-02	-.237E-02	.0000
.635	1.8216	.0046	.456E-02	.297E-02	-.145E-02	.0000
.698	1.8413	.0077	.400E-02	.261E-02	-.129E-02	.0000
.762	1.8677	.0050	.286E-02	.187E-02	-.761E-03	.0000
.825	1.8894	.0054	.207E-02	.143E-02	-.438E-03	.0000
.889	1.9061	.0065	.137E-02	.108E-02	-.210E-03	.0000
1.016	1.9226	.0066	.765E-03	.705E-03	-.154E-04	.0000
1.143	1.9266	.0053	.521E-03	.537E-03	.304E-04	.0000
1.270	1.9307	.0058	.448E-03	.481E-03	.531E-04	.0000
1.397	1.9278	.0022	.430E-03	.445E-03	.528E-04	.0000
1.524	1.9258	.0005	.415E-03	.432E-03	.492E-04	.0000
1.778	1.9244	-.0048	.430E-03	.442E-03	.508E-04	.0000
2.032	1.9232	-.0044	.412E-03	.438E-03	.546E-04	.0000

X(cm) =-2.0000 R_SURFACE = 2.5400 Npts = 22 OBTAINED 6/19/85
Pwall/PT1 = 0.0602 Theta = 9.5

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	.4676	-.0138	.156E+00	.619E-01	-.498E-02	.1299
.102	.7760	.0153	.144E+00	.648E-01	.642E-03	.0326
.152	.9824	.0640	.108E+00	.546E-01	.104E-02	.0071
.203	1.1208	.0993	.895E-01	.438E-01	-.922E-04	.0033
.254	1.2581	.1218	.701E-01	.318E-01	-.231E-02	.0012
.317	1.3624	.1474	.517E-01	.240E-01	-.692E-02	.0005
.381	1.4426	.1546	.409E-01	.203E-01	-.964E-02	.0001
.444	1.5467	.1429	.319E-01	.171E-01	-.129E-01	.0000
.508	1.6160	.1312	.275E-01	.155E-01	-.138E-01	.0000
.572	1.6915	.1006	.222E-01	.142E-01	-.135E-01	.0000
.635	1.7537	.0762	.158E-01	.122E-01	-.109E-01	.0000
.698	1.8209	.0380	.100E-01	.790E-02	-.676E-02	.0000
.762	1.8517	.0256	.688E-02	.570E-02	-.458E-02	.0000
.825	1.8811	.0161	.382E-02	.332E-02	-.227E-02	.0000
.889	1.9024	.0090	.191E-02	.165E-02	-.776E-03	.0000
1.016	1.9225	.0074	.794E-03	.757E-03	-.743E-04	.0000
1.143	1.9273	.0024	.536E-03	.562E-03	.379E-04	.0000
1.270	1.9288	.0013	.476E-03	.508E-03	.764E-04	.0000
1.397	1.9252	-.0028	.440E-03	.461E-03	.670E-04	.0000
1.524	1.9253	-.0039	.432E-03	.453E-03	.800E-04	.0000
1.778	1.9238	-.0061	.432E-03	.451E-03	.476E-04	.0000
2.032	1.9216	-.0033	.451E-03	.471E-03	.860E-04	.0000

X(cm) =-1.5000 R_SURFACE = 2.5400 Npts = 22 OBTAINED 6/19/85
Pwall/PT1 = 0.0651 Theta = 10.7

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	.1924	-.0051	.121E+00	.721E-01	-.380E-02	.3168
.102	.3990	-.0139	.132E+00	.796E-01	-.524E-02	.1490
.152	.6451	.0154	.128E+00	.731E-01	-.627E-04	.0487
.203	.8273	.0462	.109E+00	.672E-01	.413E-02	.0163
.254	.9701	.0866	.958E-01	.556E-01	.698E-02	.0071
.317	1.1184	.1368	.744E-01	.435E-01	.482E-02	.0020
.381	1.2488	.1683	.537E-01	.333E-01	.153E-02	.0005
.444	1.3476	.1960	.425E-01	.244E-01	-.210E-02	.0002
.508	1.4482	.2091	.324E-01	.176E-01	-.433E-02	.0001
.572	1.5173	.2139	.266E-01	.141E-01	-.701E-02	.0000
.635	1.6081	.2015	.225E-01	.129E-01	-.998E-02	.0000
.698	1.6761	.1777	.196E-01	.129E-01	-.112E-01	.0000
.762	1.7315	.1525	.183E-01	.134E-01	-.125E-01	.0000
.825	1.8120	.0990	.130E-01	.123E-01	-.108E-01	.0000
.889	1.8570	.0680	.841E-02	.950E-02	-.755E-02	.0000
1.016	1.9074	.0192	.237E-02	.343E-02	-.205E-02	.0000
1.143	1.9237	.0019	.718E-03	.998E-03	-.126E-03	.0000
1.270	1.9267	-.0023	.494E-03	.558E-03	.365E-04	.0000
1.397	1.9281	-.0073	.432E-03	.440E-03	.373E-04	.0000
1.524	1.9264	-.0050	.479E-03	.499E-03	.829E-04	.0000
1.778	1.9258	-.0057	.461E-03	.489E-03	.769E-04	.0000
2.032	1.9227	-.0044	.490E-03	.511E-03	.100E-03	.0000

X(cm) =-1.0000 R_SURFACE = 2.5400 Npts = 22 OBTAINED 6/19/85
Pwall/PT1 = 0.0712 Theta = 11.9

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	-.0207	.0061	.867E-01	.434E-01	-.246E-02	.5887
.102	.1507	-.0137	.120E+00	.594E-01	-.106E-01	.3773
.152	.3515	-.0029	.138E+00	.717E-01	-.823E-02	.1930
.203	.4982	.0089	.139E+00	.713E-01	-.705E-02	.1064
.254	.6880	.0419	.136E+00	.655E-01	-.789E-03	.0455
.317	.8759	.0563	.108E+00	.602E-01	.165E-02	.0130
.381	1.0126	.1234	.920E-01	.497E-01	.306E-02	.0054
.444	1.1468	.1602	.708E-01	.404E-01	.518E-02	.0016
.508	1.2512	.1910	.526E-01	.318E-01	.357E-02	.0003
.572	1.3438	.2059	.419E-01	.246E-01	.290E-02	.0001
.635	1.4391	.2330	.321E-01	.178E-01	.659E-03	.0000
.698	1.4923	.2491	.243E-01	.134E-01	-.126E-02	.0000
.762	1.5601	.2581	.205E-01	.106E-01	-.311E-02	.0000
.825	1.6298	.2610	.160E-01	.804E-02	-.455E-02	.0000
.889	1.7051	.2396	.131E-01	.778E-02	-.618E-02	.0000
1.016	1.7981	.1847	.868E-02	.107E-01	-.804E-02	.0000
1.143	1.8650	.1008	.537E-02	.113E-01	-.678E-02	.0000
1.270	1.9179	.0160	.135E-02	.326E-02	-.146E-02	.0000
1.397	1.9232	.0000	.506E-03	.754E-03	-.118E-03	.0000
1.524	1.9256	-.0023	.494E-03	.664E-03	-.478E-04	.0000
1.778	1.9246	-.0026	.435E-03	.447E-03	.654E-04	.0000
2.032	1.9236	-.0052	.418E-03	.430E-03	.492E-04	.0000

X(cm) =-0.5000 R_SURFACE = 2.5400 Npts = 26 OBTAINED 6/19/85
Pwall/PT1 = 0.0739 Theta = 12.3

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	-.0421	.0079	.923E-01	.561E-01	-.480E-03	.6266
.102	.0729	.0196	.109E+00	.638E-01	.954E-03	.4756
.152	.1942	.0136	.123E+00	.673E-01	-.490E-02	.3280
.203	.3335	.0186	.137E+00	.669E-01	-.624E-02	.2066
.254	.4646	.0188	.140E+00	.664E-01	-.778E-02	.1217
.317	.6219	.0326	.136E+00	.602E-01	-.447E-02	.0567
.381	.7984	.0603	.120E+00	.570E-01	-.740E-04	.0196
.444	.9522	.1074	.986E-01	.507E-01	.153E-02	.0060
.508	1.1230	.1477	.744E-01	.406E-01	.565E-02	.0015
.572	1.2138	.1763	.602E-01	.342E-01	.475E-02	.0003
.635	1.2969	.2034	.488E-01	.275E-01	.376E-02	.0003
.698	1.3674	.2229	.355E-01	.202E-01	.256E-02	.0000
.762	1.4475	.2508	.287E-01	.152E-01	.498E-03	.0000
.825	1.5187	.2674	.223E-01	.115E-01	-.355E-03	.0000
.889	1.5830	.2814	.160E-01	.859E-02	-.185E-02	.0000
1.016	1.6979	.2750	.937E-02	.516E-02	-.316E-02	.0000

1.143	1.7749	.2388	.509E 02	.603E 02	.409E 02	.0000
1.270	1.8456	.1458	.482E-02	.116E 01	-.642E 02	.0000
1.397	1.8899	.0652	.324E-02	.902E 02	-.459E-02	.0000
1.524	1.9209	.0025	.927E-03	.179E-02	-.516E-03	.0000
1.651	1.9251	-.0043	.520E-03	.556E-03	.553E-04	.0000
1.778	1.9240	-.0029	.521E-03	.575E-03	.577E-04	.0000
1.905	1.9281	-.0051	.442E-03	.450E-03	.628E-04	.0000
2.032	1.9228	-.0081	.425E-03	.440E-03	.417E-04	.0000
2.286	1.9252	-.0070	.430E-03	.451E-03	.667E-04	.0000
2.540	1.9247	-.0102	.627E-03	.644E-03	.144E-03	.0000

X(cm) = 0.0000 R_SURFACE = 2.5400 Npts = 26 OBTAINED 6/19/85
Pwall/PT1 = 0.0762 Theta = 12.8

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	.0194	.0220	.104E+00	.818E-01	.343E-01	.6266
.102	.0249	.0041	.950E-01	.658E-01	.232E-01	.5445
.152	.1028	-.0217	.111E+00	.632E-01	.872E-02	.4408
.203	.2029	-.0252	.127E+00	.630E-01	.421E-02	.3240
.254	.3174	-.0206	.143E+00	.652E-01	-.454E-03	.2253
.317	.4749	.0005	.148E+00	.655E-01	-.581E-03	.1234
.381	.6183	.0239	.143E+00	.674E-01	-.472E-03	.0624
.444	.7732	.0573	.127E+00	.605E-01	.378E-03	.0244
.508	.9048	.0834	.112E+00	.571E-01	.269E-02	.0104
.572	1.0343	.1083	.924E-01	.509E-01	.582E-02	.0032
.635	1.1585	.1450	.748E-01	.384E-01	.543E-02	.0008
.698	1.2369	.1729	.577E-01	.339E-01	.492E-02	.0006
.762	1.3378	.2089	.434E-01	.248E-01	.325E-02	.0000
.825	1.4098	.2308	.347E-01	.210E-01	.332E-02	.0001
.889	1.4807	.2567	.273E-01	.156E-01	.182E-02	.0000
1.016	1.6157	.2983	.146E-01	.722E-02	-.454E-03	.0000
1.143	1.7098	.3107	.535E-02	.314E-02	-.129E-02	.0000
1.270	1.7563	.2951	.298E-02	.291E-02	-.177E-02	.0000
1.397	1.7969	.2466	.270E-02	.532E-02	-.289E-02	.0000
1.524	1.8452	.1570	.377E-02	.104E-01	-.536E-02	.0000
1.651	1.9063	.0435	.238E-02	.709E-02	-.341E-02	.0000
1.778	1.9276	.0006	.745E-03	.152E-02	-.522E-03	.0000
1.905	1.9314	-.0052	.481E-03	.593E-03	-.983E-05	.0000
2.032	1.9298	-.0071	.418E-03	.446E-03	.403E-04	.0000
2.286	1.9298	-.0054	.427E-03	.447E-03	.388E-04	.0000
2.540	1.9301	-.0082	.489E-03	.514E-03	.722E-04	.0000

X(cm) = 0.4330 R_SURFACE = 2.7900 Npts = 26 OBTAINED 6/20/85
Pwall/PT1 = 0.0773 Theta = 13.1

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	.1815	-.0127	.124E+00	.569E-01	.145E-01	.3604
.102	.3404	-.0087	.149E+00	.650E-01	.660E-02	.2168
.152	.4534	-.0074	.157E+00	.716E-01	.249E-02	.1451
.203	.5688	-.0023	.158E+00	.723E-01	.276E-02	.0913
.254	.6750	.0205	.153E+00	.725E-01	.456E-02	.0574
.317	.7956	.0548	.140E+00	.707E-01	.678E-02	.0296
.381	.9313	.0892	.121E+00	.651E-01	.763E-02	.0133
.444	1.0187	.1314	.107E+00	.602E-01	.533E-02	.0075
.508	1.1263	.1612	.875E-01	.529E-01	.664E-02	.0025
.572	1.2268	.1901	.738E-01	.451E-01	.620E-02	.0017
.635	1.3150	.2203	.568E-01	.363E-01	.546E-02	.0005
.698	1.3982	.2451	.416E-01	.266E-01	.495E-02	.0002
.762	1.4754	.2740	.315E-01	.201E-01	.287E-02	.0000
.825	1.5554	.2975	.220E-01	.136E-01	.156E-02	.0000
.889	1.6112	.3125	.164E-01	.956E-02	.674E-03	.0000
1.016	1.7046	.3353	.574E-02	.343E-02	-.110E-02	.0000
1.143	1.7385	.3315	.241E-02	.193E-02	-.102E-02	.0000
1.270	1.7632	.3042	.161E-02	.228E-02	-.111E-02	.0000
1.397	1.7875	.2547	.200E-02	.423E-02	-.212E-02	.0000
1.524	1.8388	.1606	.347E-02	.969E-02	-.503E-02	.0000
1.651	1.8996	.0469	.247E-02	.700E-02	-.333E-02	.0000
1.778	1.9201	.0045	.862E-03	.173E-02	-.594E-03	.0000
1.905	1.9287	-.0053	.449E-03	.508E-03	-.294E-04	.0000
2.032	1.9268	-.0069	.424E-03	.447E-03	.154E-04	.0000
2.286	1.9236	-.0098	.803E-03	.850E-03	.411E-03	.0000
2.540	1.9260	-.0038	.458E-03	.475E-03	.729E-04	.0000

X(cm) = 0.8660 R_SURFACE = 3.0400 Npts = 25 OBTAINED 6/20/85
Pwall/PT1 = 0.0873 Theta = 17.9

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	.4405	.0855	.139E+00	.604E-01	.833E 02	.1279
.102	.5935	.0844	.145E+00	.680E-01	.726E-03	.0669
.152	.6965	.0708	.143E+00	.704E-01	-.232E-03	.0410
.203	.7865	.0955	.139E+00	.670E-01	.140E-02	.0288
.254	.8983	.1215	.123E+00	.681E-01	.167E-02	.0140
.317	.9870	.1488	.115E+00	.611E-01	.501E-02	.0097
.381	1.0909	.1840	.959E-01	.547E-01	.562E-02	.0043
.444	1.1633	.2109	.853E-01	.512E-01	.593E-02	.0020
.508	1.2620	.2409	.688E-01	.425E-01	.612E-02	.0013
.572	1.3563	.2768	.525E-01	.343E-01	.391E-02	.0005
.635	1.4241	.3013	.456E-01	.273E-01	.232E-02	.0002
.698	1.4961	.3189	.324E-01	.210E-01	.365E-02	.0000
.762	1.5683	.3433	.235E-01	.139E-01	.118E-02	.0000
.825	1.6296	.3593	.155E-01	.905E-02	-.455E-03	.0000
.889	1.6729	.3643	.907E-02	.552E-02	-.125E-02	.0000
1.016	1.7239	.3564	.325E-02	.254E-02	-.127E-02	.0000
1.143	1.7503	.3262	.163E-02	.177E-02	-.834E-03	.0000
1.270	1.7692	.2926	.177E-02	.288E-02	-.135E-02	.0000
1.397	1.7988	.2439	.226E-02	.516E-02	-.258E-02	.0000
1.524	1.8384	.1637	.358E-02	.104E-01	-.529E-02	.0000
1.651	1.9098	.0275	.199E-02	.537E-02	-.261E-02	.0000
1.778	1.9265	.0010	.799E-03	.150E-02	-.457E-03	.0000
1.905	1.9283	-.0076	.505E-03	.567E-03	.727E-04	.0000
2.032	1.9290	-.0054	.496E-03	.518E-03	.968E-04	.0000
2.286	1.9316	-.0053	.467E-03	.484E-03	.993E-04	.0000

X(cm) = 1.7321 R_SURFACE = 3.5400 Npts = 25 OBTAINED 6/20/85
Pwall/PT1 = 0.1091 Theta = 23.9

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	.7397	.2386	.117E+00	.461E-01	.361E-03	.0079
.102	.8485	.2355	.115E+00	.506E-01	-.289E-02	.0059
.152	.9305	.2288	.107E+00	.563E-01	-.248E-02	.0035
.203	.9898	.2242	.101E+00	.593E-01	.881E-03	.0025
.254	1.0666	.2432	.897E-01	.582E-01	.426E-02	.0021
.317	1.1500	.2742	.790E-01	.516E-01	.720E-02	.0010
.381	1.2290	.3075	.638E-01	.448E-01	.813E-02	.0005
.444	1.3006	.3503	.561E-01	.376E-01	.922E-02	.0004
.508	1.3837	.3934	.435E-01	.297E-01	.932E-02	.0003
.572	1.4531	.4219	.326E-01	.229E-01	.762E-02	.0001
.635	1.5098	.4563	.216E-01	.153E-01	.364E-02	.0000
.698	1.5584	.4721	.141E-01	.941E-02	.173E-02	.0000
.762	1.5928	.4774	.891E-02	.571E-02	-.814E-03	.0000
.825	1.6219	.4671	.623E-02	.411E-02	-.204E-02	.0000
.889	1.6484	.4494	.503E-02	.364E-02	-.240E-02	.0000
1.016	1.6929	.3973	.387E-02	.364E-02	-.268E-02	.0000
1.143	1.7383	.3371	.273E-02	.329E-02	-.216E-02	.0000
1.270	1.7713	.2854	.230E-02	.391E-02	-.211E-02	.0000
1.397	1.8193	.1989	.314E-02	.797E-02	-.409E-02	.0000
1.524	1.8879	.0727	.319E-02	.928E-02	-.471E-02	.0000
1.651	1.9225	.0050	.106E-02	.218E-02	-.899E-03	.0000
1.778	1.9282	-.0060	.557E-03	.796E-03	-.108E-03	.0000
1.905	1.9308	-.0084	.487E-03	.520E-03	.449E-04	.0000
2.032	1.9283	-.0087	.483E-03	.495E-03	.363E-04	.0000
2.286	1.9276	-.0095	.487E-03	.504E-03	.482E-04	.0000

X(cm) = 2.5981 R_SURFACE = 4.0400 Npts = 25 OBTAINED 6/20/85
Pwall/PT1 = 0.1287 Theta = 24.5

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	.8381	.3491	.912E-01	.370E-01	.476E-02	.0003
.102	.9463	.3472	.875E-01	.408E-01	-.286E-02	.0001
.152	1.0125	.3382	.837E-01	.470E-01	-.376E-02	.0002
.203	1.0708	.3374	.787E-01	.481E-01	-.135E-02	.0002
.254	1.1387	.3463	.713E-01	.446E-01	.294E-02	.0001
.317	1.2200	.3845	.586E-01	.401E-01	.627E-02	.0002
.381	1.2815	.4101	.488E-01	.352E-01	.989E-02	.0000
.444	1.3488	.4576	.360E-01	.274E-01	.983E-02	.0000
.508	1.3987	.4961	.263E-01	.205E-01	.775E-02	.0000
.572	1.4408	.5342	.174E-01	.135E-01	.445E-02	.0000

.635	1.4742	.5488	.121E-01	.972E-02	.276E-02	.0000
.698	1.5011	.5645	.782E-02	.533E-02	.617E-03	.0000
.762	1.5162	.5644	.610E-02	.380E-02	-.140E-03	.0000
.825	1.5323	.5578	.502E-02	.280E-02	-.951E-03	.0000
.889	1.5489	.5439	.446E-02	.250E-02	-.132E-02	.0000
1.016	1.5950	.4984	.423E-02	.282E-02	-.227E-02	.0000
1.143	1.6589	.4259	.489E-02	.467E-02	-.383E-02	.0000
1.270	1.7355	.3180	.542E-02	.794E-02	-.559E-02	.0000
1.397	1.8259	.1723	.542E-02	.124E-01	-.710E-02	.0000
1.524	1.8971	.0451	.303E-02	.783E-02	-.412E-02	.0000
1.651	1.9233	-.0036	.872E-03	.149E-02	-.416E-03	.0000
1.778	1.9282	-.0076	.516E-03	.563E-03	.182E-04	.0000
1.905	1.9260	-.0122	.504E-03	.518E-03	.915E-04	.0000
2.032	1.9269	-.0101	.525E-03	.534E-03	.835E-04	.0000
2.286	1.9267	-.0114	.506E-03	.529E-03	.455E-04	.0000

X(cm) = 3.4641 R_SURFACE = 4.5400 Npts = 25 OBTAINED 6/20/85
Pwall/PT1 = 0.1409 Theta = 26.7

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	.9729	.4470	.648E-01	.313E-01	.269E-02	.0000
.102	1.0543	.4419	.633E-01	.327E-01	-.150E-02	.0000
.152	1.1158	.4296	.587E-01	.352E-01	-.282E-04	.0000
.203	1.1703	.4358	.550E-01	.339E-01	.228E-02	.0000
.254	1.2210	.4548	.482E-01	.313E-01	.423E-02	.0000
.317	1.2689	.4740	.413E-01	.277E-01	.621E-02	.0000
.381	1.3222	.5043	.303E-01	.233E-01	.721E-02	.0000
.444	1.3544	.5406	.255E-01	.191E-01	.592E-02	.0000
.508	1.3910	.5650	.173E-01	.139E-01	.495E-02	.0000
.572	1.4170	.5894	.121E-01	.954E-02	.317E-02	.0000
.635	1.4324	.6048	.838E-02	.622E-02	.135E-02	.0000
.698	1.4447	.6114	.632E-02	.433E-02	.650E-03	.0000
.762	1.4591	.6129	.481E-02	.306E-02	.306E-04	.0000
.825	1.4685	.6118	.399E-02	.238E-02	-.311E-03	.0000
.889	1.4791	.6060	.335E-02	.189E-02	-.474E-03	.0000
1.016	1.4975	.5886	.281E-02	.152E-02	-.770E-03	.0000
1.143	1.5354	.5509	.329E-02	.192E-02	-.138E-02	.0000
1.270	1.5886	.4748	.532E-02	.467E-02	-.350E-02	.0000
1.397	1.7079	.3024	.106E-01	.150E-01	-.109E-01	.0000
1.524	1.8806	.0576	.743E-02	.136E-01	-.909E-02	.0000
1.651	1.9238	-.0059	.121E-02	.186E-02	-.911E-03	.0000
1.778	1.9261	-.0124	.555E-03	.577E-03	.252E-04	.0000
1.905	1.9276	-.0148	.483E-03	.500E-03	.102E-03	.0000
2.032	1.9255	-.0167	.520E-03	.536E-03	.113E-03	.0000
2.286	1.9238	-.0195	.473E-03	.500E-03	.681E-04	.0000

X(cm) = 4.3301 R_SURFACE = 5.0400 Npts = 27 OBTAINED 6/20/85
Pwall/PT1 = 0.1495 Theta = 31.8

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	1.0549	.5043	.514E-01	.272E-01	.215E-02	.0000
.102	1.1147	.5038	.490E-01	.267E-01	-.415E-03	.0000
.152	1.1672	.5107	.446E-01	.265E-01	-.115E-02	.0000
.203	1.2131	.5102	.400E-01	.262E-01	-.251E-03	.0000
.254	1.2484	.5180	.362E-01	.252E-01	.601E-03	.0000
.317	1.2891	.5386	.294E-01	.221E-01	.253E-02	.0000
.381	1.3225	.5618	.241E-01	.182E-01	.244E-02	.0000
.444	1.3505	.5815	.187E-01	.143E-01	.202E-02	.0000
.508	1.3709	.5991	.145E-01	.117E-01	.823E-03	.0000
.572	1.3895	.6175	.110E-01	.863E-02	-.404E-03	.0000
.635	1.4042	.6231	.909E-02	.758E-02	-.692E-03	.0000
.698	1.4081	.6384	.575E-02	.449E-02	.593E-03	.0000
.762	1.4171	.6456	.472E-02	.318E-02	-.122E-03	.0000
.825	1.4221	.6479	.392E-02	.262E-02	-.289E-03	.0000
.889	1.4306	.6454	.307E-02	.211E-02	-.437E-03	.0000
1.016	1.4446	.6340	.242E-02	.174E-02	-.375E-03	.0000
1.143	1.4542	.6178	.234E-02	.146E-02	-.462E-03	.0000
1.270	1.4585	.5868	.351E-02	.169E-02	-.617E-03	.0000
1.397	1.4800	.5318	.440E-02	.262E-02	-.155E-02	.0000
1.524	1.5736	.4094	.763E-02	.748E-02	-.584E-02	.0000
1.651	1.7872	.1555	.144E-01	.192E-01	-.154E-01	.0000
1.778	1.9176	-.0130	.241E-02	.313E-02	-.141E-02	.0000
1.905	1.9289	-.0286	.119E-02	.130E-02	.684E-03	.0000
2.032	1.9287	-.0259	.827E-03	.877E-03	.418E-03	.0000

2.286	1.9307	-.0259	.532E-03	.551E-03	.109E-03	.0000
2.540	1.9294	-.0264	.541E-03	.562E-03	.107E-03	.0000
2.794	1.9299	-.0234	.579E-03	.577E-03	.835E-04	.0000

X(cm) = 4.7631 R_SURFACE = 5.2900 Npts = 26 OBTAINED 6/24/85
Pwall/PT1 = 0.1511 Theta = 31.7

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	1.1159	.5347	.440E-01	.254E-01	.145E-02	.0000
.102	1.1705	.5303	.393E-01	.271E-01	.224E-03	.0000
.152	1.2017	.5290	.372E-01	.281E-01	-.492E-03	.0000
.203	1.2393	.5388	.321E-01	.258E-01	.482E-03	.0000
.254	1.2656	.5499	.292E-01	.243E-01	.751E-03	.0000
.317	1.3017	.5697	.232E-01	.198E-01	.251E-02	.0000
.381	1.3264	.5864	.200E-01	.171E-01	.227E-02	.0000
.444	1.3499	.6033	.150E-01	.139E-01	.234E-02	.0000
.508	1.3696	.6226	.114E-01	.103E-01	.127E-02	.0000
.572	1.3784	.6356	.964E-02	.801E-02	.336E-03	.0000
.635	1.3765	.6380	.120E-01	.793E-02	-.219E-03	.0000
.698	1.4015	.6530	.471E-02	.391E-02	-.963E-04	.0000
.762	1.4083	.6563	.424E-02	.317E-02	-.534E-03	.0000
.825	1.4144	.6590	.319E-02	.244E-02	-.540E-03	.0000
.889	1.4178	.6570	.293E-02	.224E-02	-.621E-03	.0000
1.016	1.4220	.6438	.234E-02	.162E-02	-.415E-03	.0000
1.143	1.4189	.6228	.266E-02	.144E-02	-.226E-03	.0000
1.270	1.4150	.6022	.296E-02	.134E-02	-.200E-03	.0000
1.397	1.4306	.5712	.312E-02	.145E-02	-.494E-03	.0000
1.524	1.4713	.5091	.430E-02	.315E-02	-.224E-02	.0000
1.651	1.6161	.3361	.833E-02	.977E-02	-.781E-02	.0000
1.778	1.8769	.0321	.895E-02	.120E-01	-.965E-02	.0000
1.905	1.9211	-.0265	.768E-03	.894E-03	-.287E-03	.0000
2.032	1.9214	-.0279	.486E-03	.507E-03	.352E-04	.0000
2.159	1.9195	-.0283	.444E-03	.458E-03	.924E-05	.0000
2.286	1.9197	-.0299	.447E-03	.462E-03	.321E-04	.0000

X(cm) = 5.1962 R_SURFACE = 5.5400 Npts = 27 OBTAINED 6/24/85
Pwall/PT1 = 0.1469 Theta = 18.3

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	1.1378	.5656	.255E-01	.195E-01	.509E-02	.0000
.102	1.1900	.5594	.240E-01	.208E-01	.285E-02	.0000
.152	1.2315	.5545	.230E-01	.214E-01	.799E-03	.0000
.203	1.2568	.5604	.233E-01	.210E-01	.303E-03	.0000
.254	1.2826	.5670	.210E-01	.191E-01	.457E-03	.0000
.317	1.3145	.5817	.175E-01	.163E-01	.560E-03	.0000
.381	1.3297	.5949	.166E-01	.152E-01	.343E-03	.0000
.444	1.3494	.6072	.135E-01	.127E-01	.647E-03	.0000
.508	1.3633	.6237	.108E-01	.101E-01	.206E-03	.0000
.572	1.3745	.6322	.934E-02	.871E-02	.383E-04	.0000
.635	1.3844	.6406	.728E-02	.690E-02	-.445E-03	.0000
.698	1.3937	.6509	.459E-02	.427E-02	-.108E-03	.0000
.762	1.3995	.6552	.373E-02	.333E-02	-.120E-03	.0000
.825	1.4072	.6581	.306E-02	.277E-02	-.473E-03	.0000
.889	1.4110	.6594	.262E-02	.224E-02	-.625E-03	.0000
1.016	1.4140	.6542	.235E-02	.174E-02	-.479E-03	.0000
1.143	1.4028	.6342	.276E-02	.162E-02	-.114E-03	.0000
1.270	1.3942	.6188	.263E-02	.130E-02	-.171E-03	.0000
1.397	1.3922	.5994	.229E-02	.112E-02	-.154E-03	.0000
1.524	1.4081	.5758	.235E-02	.130E-02	-.423E-03	.0000
1.651	1.4452	.5239	.317E-02	.248E-02	-.167E-02	.0000
1.778	1.5865	.3587	.710E-02	.795E-02	-.666E-02	.0000
1.905	1.8363	.0748	.112E-01	.142E-01	-.118E-01	.0000
2.032	1.9231	-.0297	.688E-03	.798E-03	-.217E-03	.0000
2.159	1.9252	-.0283	.449E-03	.474E-03	.402E-04	.0000
2.286	1.9235	-.0250	.443E-03	.460E-03	.347E-04	.0000
2.540	1.9254	-.0261	.452E-03	.464E-03	.293E-04	.0000

X(cm) = 5.8962 R_SURFACE = 5.5400 Npts = 31 OBTAINED 6/24/85
Pwall/PT1 = 0.0375 Theta = 2.9

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	1.5700	.0430	.127E-01	.721E-02	.160E-02	.0000
.102	1.6235	.0944	.143E-01	.835E-02	.218E-02	.0000

.152	1.6426	.1316	.150E-01	.975E-02	.325E-02	.0000
.203	1.6475	.1637	.155E-01	.110E-01	.375E-02	.0000
.254	1.6503	.1905	.147E-01	.109E-01	.409E-02	.0000
.317	1.6384	.2354	.144E-01	.112E-01	.436E-02	.0000
.381	1.6288	.2805	.129E-01	.111E-01	.464E-02	.0000
.444	1.6143	.3305	.116E-01	.105E-01	.432E-02	.0000
.508	1.5950	.3678	.115E-01	.105E-01	.412E-02	.0000
.572	1.5818	.4115	.996E-02	.946E-02	.369E-02	.0000
.635	1.5665	.4509	.818E-02	.826E-02	.290E-02	.0000
.698	1.5538	.4878	.669E-02	.711E-02	.207E-02	.0000
.762	1.5395	.5191	.564E-02	.616E-02	.140E-02	.0000
.825	1.5260	.5435	.464E-02	.523E-02	.756E-03	.0000
.889	1.5141	.5680	.376E-02	.426E-02	.144E-03	.0000
1.016	1.4883	.6012	.267E-02	.307E-02	-.358E-03	.0000
1.143	1.4689	.6274	.191E-02	.201E-02	-.556E-03	.0000
1.270	1.4509	.6385	.145E-02	.126E-02	-.431E-03	.0000
1.397	1.4290	.6380	.176E-02	.102E-02	-.193E-03	.0000
1.524	1.3993	.6288	.213E-02	.885E-03	-.824E-04	.0000
1.651	1.3877	.6175	.189E-02	.754E-03	-.202E-04	.0000
1.778	1.3772	.6086	.155E-02	.675E-03	.231E-04	.0000
1.905	1.3777	.6013	.137E-02	.634E-03	-.134E-04	.0000
2.032	1.3841	.5891	.136E-02	.760E-03	-.226E-03	.0000
2.159	1.3987	.5659	.156E-02	.109E-02	-.635E-03	.0000
2.286	1.4514	.5021	.303E-02	.281E-02	-.232E-02	.0000
2.413	1.6138	.3183	.642E-02	.739E-02	-.639E-02	.0000
2.540	1.8965	.0004	.354E-02	.438E-02	-.347E-02	.0000
2.667	1.9207	-.0258	.461E-03	.480E-03	.245E-04	.0000
2.794	1.9166	-.0252	.422E-03	.432E-03	.460E-04	.0000
3.048	1.9188	-.0226	.424E-03	.441E-03	.450E-04	.0000

X(cm) = 6.3962 R_SURFACE = 5.5400 Npts = 31 OBTAINED 6/24/85
Pwall/PT1 = 0.0368 Theta = 0.0

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	1.5795	.0006	.151E-01	.646E-02	.114E-02	.0000
.102	1.6496	.0415	.146E-01	.750E-02	.152E-02	.0000
.152	1.6783	.0694	.158E-01	.830E-02	.199E-02	.0000
.203	1.6952	.0832	.158E-01	.904E-02	.192E-02	.0000
.254	1.7038	.0928	.157E-01	.954E-02	.182E-02	.0000
.317	1.7079	.1103	.155E-01	.101E-01	.152E-02	.0000
.381	1.7100	.1265	.157E-01	.104E-01	.192E-02	.0000
.444	1.7149	.1564	.148E-01	.101E-01	.209E-02	.0000
.508	1.7117	.1884	.137E-01	.962E-02	.256E-02	.0000
.572	1.7086	.2207	.128E-01	.889E-02	.288E-02	.0000
.635	1.7026	.2553	.113E-01	.796E-02	.276E-02	.0000
.698	1.6907	.2903	.103E-01	.782E-02	.274E-02	.0000
.762	1.6802	.3252	.884E-02	.704E-02	.291E-02	.0000
.825	1.6683	.3587	.771E-02	.647E-02	.242E-02	.0000
.889	1.6579	.3847	.628E-02	.576E-02	.230E-02	.0000
1.016	1.6328	.4412	.463E-02	.457E-02	.153E-02	.0000
1.143	1.6021	.4853	.316E-02	.368E-02	.929E-03	.0000
1.270	1.5746	.5225	.220E-02	.277E-02	.350E-03	.0000
1.397	1.5458	.5585	.144E-02	.183E-02	-.222E-03	.0000
1.524	1.5141	.5794	.137E-02	.133E-02	-.345E-03	.0000
1.778	1.4380	.5906	.186E-02	.788E-03	-.308E-03	.0000
2.032	1.3984	.5957	.149E-02	.623E-03	-.246E-03	.0000
2.159	1.3900	.5937	.128E-02	.534E-03	-.197E-03	.0000
2.286	1.3825	.5872	.123E-02	.547E-03	-.238E-03	.0000
2.413	1.3824	.5806	.120E-02	.646E-03	-.330E-03	.0000
2.540	1.3912	.5600	.141E-02	.978E-03	-.670E-03	.0000
2.667	1.4271	.5210	.217E-02	.187E-02	-.149E-02	.0000
2.794	1.5444	.3905	.473E-02	.512E-02	-.448E-02	.0000
2.921	1.7936	.1126	.823E-02	.992E-02	-.854E-02	.0000
3.048	1.9155	-.0254	.445E-03	.460E-03	.517E-04	.0000
3.302	1.9142	-.0221	.454E-03	.465E-03	.740E-04	.0000

X(cm) = 7.3962 R_SURFACE = 5.5400 Npts = 34 OBTAINED 6/24/85
Pwall/PT1 = 0.0360 Theta = 0.0

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	1.6077	-.0110	.132E-01	.525E-02	-.613E-03	.0000
.102	1.6690	.0070	.124E-01	.598E-02	.274E-03	.0000
.152	1.6983	.0257	.128E-01	.623E-02	.875E-03	.0000
.203	1.7264	.0339	.129E-01	.682E-02	.125E-02	.0000

.254	1.7477	.0441	.126E-01	.702E-02	.122E-02	.0000
.317	1.7450	.0512	.127E-01	.726E-02	.120E-02	.0000
.381	1.7547	.0587	.131E-01	.735E-02	.110E-02	.0000
.444	1.7705	.0644	.127E-01	.726E-02	.956E-03	.0000
.508	1.7770	.0673	.131E-01	.734E-02	.818E-03	.0000
.572	1.7877	.0750	.126E-01	.711E-02	.719E-03	.0000
.635	1.7911	.0784	.126E-01	.710E-02	.488E-03	.0000
.698	1.8075	.0849	.117E-01	.687E-02	.491E-03	.0000
.762	1.8085	.0956	.113E-01	.660E-02	.544E-03	.0000
.825	1.8098	.1087	.105E-01	.593E-02	.687E-03	.0000
.889	1.8090	.1277	.995E-02	.539E-02	.883E-03	.0000
1.016	1.8124	.1625	.697E-02	.424E-02	.109E-02	.0000
1.143	1.7942	.1987	.622E-02	.472E-02	.202E-02	.0000
1.270	1.7881	.2488	.357E-02	.285E-02	.808E-03	.0000
1.397	1.7640	.2891	.284E-02	.258E-02	.871E-03	.0000
1.524	1.7495	.3238	.186E-02	.203E-02	.559E-03	.0000
1.778	1.6979	.3882	.120E-02	.161E-02	.368E-03	.0000
2.032	1.6224	.4318	.128E-02	.112E-02	.111E-03	.0000
2.286	1.5666	.4645	.810E-03	.614E-03	-.129E-03	.0000
2.540	1.5238	.4924	.687E-03	.523E-03	-.424E-04	.0000
2.794	1.4845	.5172	.637E-03	.496E-03	-.833E-04	.0000
2.921	1.4660	.5229	.621E-03	.498E-03	-.909E-04	.0000
3.048	1.4543	.5304	.640E-03	.512E-03	-.120E-03	.0000
3.175	1.4433	.5377	.663E-03	.555E-03	-.138E-03	.0000
3.302	1.4365	.5405	.701E-03	.564E-03	-.202E-03	.0000
3.556	1.4593	.5149	.176E-02	.160E-02	-.123E-02	.0000
3.683	1.5535	.4078	.463E-02	.492E-02	-.434E-02	.0000
3.810	1.7606	.1678	.737E-02	.895E-02	-.759E-02	.0000
3.937	1.9186	-.0120	.440E-03	.450E-03	.559E-04	.0000

X(cm) = 8.3962 R_SURFACE = 5.5400 Npts = 32 OBTAINED 6/25/85
Pwall/PT1 = 0.0349 Theta = 0.0

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	1.6140	-.0014	.121E-01	.561E-02	-.182E-02	.0000
.102	1.6753	.0055	.102E-01	.539E-02	-.686E-03	.0000
.152	1.7155	.0165	.993E-02	.575E-02	.180E-03	.0000
.203	1.7390	.0287	.996E-02	.603E-02	.746E-03	.0000
.254	1.7546	.0400	.102E-01	.625E-02	.104E-02	.0000
.317	1.7729	.0458	.103E-01	.629E-02	.143E-02	.0000
.381	1.7812	.0499	.102E-01	.652E-02	.151E-02	.0000
.444	1.7907	.0531	.103E-01	.651E-02	.150E-02	.0000
.508	1.7952	.0540	.103E-01	.644E-02	.154E-02	.0000
.572	1.8045	.0571	.102E-01	.614E-02	.153E-02	.0000
.635	1.8154	.0597	.987E-02	.612E-02	.131E-02	.0000
.698	1.8281	.0609	.920E-02	.578E-02	.119E-02	.0000
.762	1.8355	.0646	.883E-02	.525E-02	.956E-03	.0000
.825	1.8390	.0700	.881E-02	.495E-02	.973E-03	.0000
.889	1.8435	.0716	.793E-02	.469E-02	.661E-03	.0000
1.016	1.8580	.0788	.669E-02	.394E-02	.358E-03	.0000
1.143	1.8618	.0891	.544E-02	.319E-02	.301E-03	.0000
1.270	1.8594	.1095	.386E-02	.246E-02	.379E-03	.0000
1.397	1.8553	.1435	.288E-02	.194E-02	.284E-03	.0000
1.524	1.8434	.1707	.194E-02	.154E-02	.247E-03	.0000
1.778	1.8112	.2306	.115E-02	.123E-02	.192E-03	.0000
2.032	1.7635	.2795	.933E-03	.973E-03	.146E-03	.0000
2.540	1.6606	.3673	.617E-03	.506E-03	-.108E-03	.0000
3.048	1.5893	.4301	.460E-03	.393E-03	-.304E-04	.0000
3.556	1.5315	.4800	.394E-03	.363E-03	-.163E-04	.0000
3.810	1.5104	.4968	.403E-03	.382E-03	-.790E-04	.0000
4.064	1.4972	.5077	.509E-03	.471E-03	-.159E-03	.0000
4.318	1.5122	.4891	.123E-02	.124E-02	-.898E-03	.0000
4.572	1.7356	.2037	.661E-02	.916E-02	-.730E-02	.0000
4.826	1.9098	-.0046	.393E-03	.382E-03	.505E-04	.0000
5.080	1.9136	.0006	.394E-03	.382E-03	.526E-04	.0000
5.334	1.9165	.0032	.398E-03	.397E-03	.302E-04	.0000

X(cm) = 9.3962 R_SURFACE = 5.5400 Npts = 32 OBTAINED 6/25/85
Pwall/PT1 = 0.0338 Theta = 0.0

Y	UMEAN	VMEAN	U2	V2	UV	GMinus
.051	1.6392	.0118	.119E-01	.585E-02	-.241E-02	.0000
.102	1.6966	.0114	.977E-02	.525E-02	-.112E-02	.0000
.152	1.7316	.0177	.891E-02	.514E-02	-.611E-03	.0000

.203	1.7549	.0262	.900E 02	.527E 02	.123E 03	.0000
.254	1.7700	.0326	.913E 02	.555E 02	.404E-03	.0000
.317	1.7898	.0374	.875E 02	.580E 02	.877E-03	.0000
.381	1.7944	.0431	.936E-02	.620E-02	.136E-02	.0000
.444	1.8080	.0471	.890E-02	.599E-02	.138E-02	.0000
.508	1.8182	.0509	.901E-02	.594E-02	.166E-02	.0000
.572	1.8277	.0480	.866E-02	.574E-02	.168E-02	.0000
.635	1.8342	.0500	.834E-02	.549E-02	.162E-02	.0000
.698	1.8371	.0512	.807E-02	.530E-02	.163E-02	.0000
.762	1.8470	.0530	.766E-02	.485E-02	.134E-02	.0000
.825	1.8593	.0535	.708E-02	.446E 02	.119E-02	.0000
.889	1.8613	.0569	.650E-02	.400E-02	.103E-02	.0000
1.016	1.8727	.0575	.559E-02	.350E-02	.804E-03	.0000
1.143	1.8837	.0592	.437E-02	.286E-02	.392E-03	.0000
1.270	1.8897	.0604	.332E-02	.233E-02	.194E-03	.0000
1.397	1.8912	.0636	.269E-02	.206E-02	.944E-04	.0000
1.524	1.8897	.0720	.210E-02	.167E-02	.328E-04	.0000
1.778	1.8751	.1103	.124E-02	.113E-02	.729E-04	.0000
2.032	1.8455	.1589	.894E-03	.894E-03	.156E-03	.0000
2.540	1.7589	.2430	.762E-03	.651E-03	.690E-05	.0000
3.048	1.6940	.3274	.550E-03	.483E-03	-.308E-04	.0000
3.556	1.6359	.3819	.451E-03	.425E-03	-.856E-05	.0000
4.064	1.5884	.4268	.371E-03	.356E-03	-.251E-04	.0000
4.572	1.5597	.4686	.401E-03	.392E-03	-.337E-04	.0000
4.826	1.5540	.4831	.524E-03	.523E-03	-.159E-03	.0000
5.080	1.5808	.4467	.147E-02	.183E-02	-.126E-02	.0000
5.334	1.8520	.0763	.486E-02	.706E-02	-.533E-02	.0000
5.588	1.9117	.0012	.425E-03	.408E-03	.333E-04	.0000
5.842	1.9143	.0024	.451E-03	.420E-03	.139E-05	.0000

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DENSITY DATA FROM HOLOGRAPHIC INTERFEROMETRY

MODEL CONE ANGLE = 30.0 Degrees
TOTAL PRESSURE = 1.7 Atmospheres
TOTAL TEMPERATURE = 270 K

****

X(cm) =-5.003 Npts = 42
R_SURFACE = 2.540
R_SHOCK = 0.000 SHOCK ANGLE = 0.0 Degrees

R(cm)	RHO/RHOT
2.542	0.04156
2.567	0.04372
2.591	0.04584
2.616	0.04791
2.640	0.04993
2.664	0.05191
2.689	0.05384
2.713	0.05571
2.738	0.05754
2.762	0.05931
2.787	0.06104
2.811	0.06271
2.836	0.06433
2.860	0.06590
2.884	0.06742
2.909	0.06889
2.933	0.07031
2.958	0.07168
2.982	0.07299
3.007	0.07426
3.031	0.07548
3.056	0.07665
3.080	0.07777
3.104	0.07885
3.129	0.07987
3.153	0.08085
3.178	0.08178
3.202	0.08266
3.227	0.08350
3.251	0.08427
3.276	0.08499
3.300	0.08562
3.324	0.08609
3.349	0.08695
3.373	0.08786
3.398	0.08840
3.422	0.08895
3.447	0.08921
3.471	0.08943
3.496	0.08957
3.520	0.08961
3.544	0.08961

X(cm) =-4.013 Npts = 41
R_SURFACE = 2.540
R_SHOCK = 0.000 SHOCK ANGLE = 0.0 Degrees

R(cm)	RHO/RHOT
2.542	0.04138
2.567	0.04314
2.591	0.04473
2.616	0.04618
2.640	0.04752
2.664	0.04878
2.689	0.04998
2.713	0.05113
2.738	0.05226
2.762	0.05337
2.787	0.05448
2.811	0.05561
2.836	0.05675
2.860	0.05791
2.884	0.05910
2.909	0.06033
2.933	0.06158
2.958	0.06287
2.982	0.06420
3.007	0.06555
3.031	0.06693
3.056	0.06834
3.080	0.06977
3.104	0.07121
3.129	0.07266
3.153	0.07411
3.178	0.07556
3.202	0.07700
3.227	0.07841
3.251	0.07980
3.276	0.08116
3.300	0.08247
3.324	0.08374
3.349	0.08494
3.373	0.08609
3.398	0.08718
3.422	0.08829
3.447	0.08882
3.471	0.08924
3.496	0.08953
3.520	0.08961

X(cm) =-3.009 Npts = 41
R_SURFACE = 2.540
R_SHOCK = 0.000 SHOCK ANGLE = 0.0 Degrees

R(cm)	RHO/RHOT
2.542	0.05683
2.567	0.05736
2.591	0.05788
2.616	0.05841
2.640	0.05895
2.664	0.05952
2.689	0.06012
2.713	0.06075
2.738	0.06143
2.762	0.06215

2.787	0.06291
2.811	0.06372
2.836	0.06458
2.860	0.06548
2.884	0.06643
2.909	0.06742
2.933	0.06845
2.958	0.06952
2.982	0.07062
3.007	0.07174
3.031	0.07289
3.056	0.07405
3.080	0.07523
3.104	0.07640
3.129	0.07758
3.153	0.07875
3.178	0.07991
3.202	0.08104
3.227	0.08214
3.251	0.08320
3.276	0.08422
3.300	0.08518
3.324	0.08607
3.349	0.08689
3.373	0.08760
3.398	0.08817
3.422	0.08863
3.447	0.08902
3.471	0.08934
3.496	0.08957
3.520	0.08961

X(cm) = -2.007 Npts = 42
R_SURFACE = 2.540
R_SHOCK = 3.373 SHOCK ANGLE = 3.4 Degrees

R(cm)	RHO/RHOT
2.543	0.04549
2.569	0.05780
2.594	0.06534
2.620	0.07062
2.645	0.07484
2.670	0.07845
2.696	0.08156
2.721	0.08412
2.747	0.08610
2.772	0.08747
2.798	0.08831
2.823	0.08871
2.848	0.08879
2.874	0.08872
2.899	0.08860
2.925	0.08855
2.950	0.08863
2.976	0.08886
3.001	0.08923
3.027	0.08973
3.052	0.09029
3.077	0.09086
3.103	0.09137
3.128	0.09179
3.153	0.09208
3.179	0.09221
3.205	0.09219
3.230	0.09200
3.255	0.09189
3.281	0.09176
3.306	0.09162
3.332	0.09147
3.357	0.09130
3.382	0.09112
3.408	0.09093
3.434	0.09074
3.459	0.09050
3.485	0.09024

3.510	0.09002
3.536	0.08973
3.561	0.08938
3.586	0.08961

X(cm) = -1.007 Npts = 42
R_SURFACE = 2.540
R_SHOCK = 3.769 SHOCK ANGLE = 25.7 Degrees

R(cm)	RHO/RHOT
2.547	0.06940
2.579	0.07055
2.611	0.07158
2.642	0.07249
2.674	0.07331
2.706	0.07404
2.738	0.07471
2.770	0.07534
2.802	0.07595
2.834	0.07656
2.866	0.07722
2.897	0.07793
2.929	0.07874
2.961	0.07966
2.993	0.08074
3.025	0.08198
3.057	0.08343
3.088	0.08509
3.120	0.08700
3.152	0.08916
3.184	0.09158
3.216	0.09426
3.248	0.09721
3.280	0.10041
3.312	0.10384
3.343	0.10746
3.375	0.11122
3.407	0.11505
3.439	0.11885
3.471	0.12248
3.503	0.12577
3.534	0.12845
3.566	0.13014
3.598	0.13018
3.630	0.12727
3.662	0.11733
3.694	0.11649
3.726	0.11426
3.757	0.10960
3.789	0.10400
3.821	0.10412
3.853	0.08961

X(cm) = -0.012 Npts = 42
R_SURFACE = 2.541
R_SHOCK = 4.282 SHOCK ANGLE = 27.5 Degrees

R(cm)	RHO/RHOT
2.551	0.07381
2.594	0.07592
2.636	0.07752
2.679	0.07870
2.721	0.07955
2.763	0.08014
2.806	0.08057
2.848	0.08089
2.890	0.08119
2.933	0.08153
2.975	0.08195
3.018	0.08253
3.060	0.08330
3.103	0.08429
3.145	0.08555
3.187	0.08708

3.230	0.08892
3.272	0.09107
3.315	0.09352
3.357	0.09627
3.399	0.09931
3.442	0.10261
3.484	0.10615
3.527	0.10988
3.569	0.11376
3.612	0.11773
3.654	0.12173
3.697	0.12570
3.739	0.12956
3.781	0.13322
3.824	0.13658
3.866	0.13955
3.909	0.14200
3.951	0.14382
3.994	0.14486
4.036	0.14494
4.078	0.14386
4.121	0.14135
4.163	0.13706
4.206	0.13058
4.248	0.12363
4.291	0.08961

X(cm) = 0.996 Npts = 42
R_SURFACE = 3.115
R_SHOCK = 4.795 SHOCK ANGLE = 27.5 Degrees

R(cm)	RHO/RHOT
3.124	0.10306
3.165	0.10254
3.206	0.10160
3.246	0.10058
3.287	0.09976
3.329	0.09933
3.369	0.09943
3.410	0.10013
3.451	0.10147
3.492	0.10344
3.533	0.10600
3.574	0.10909
3.615	0.11263
3.656	0.11652
3.697	0.12065
3.738	0.12491
3.779	0.12919
3.820	0.13339
3.861	0.13740
3.902	0.14112
3.943	0.14450
3.984	0.14745
4.025	0.14993
4.066	0.15191
4.107	0.15338
4.148	0.15434
4.189	0.15482
4.230	0.15485
4.271	0.15448
4.312	0.15378
4.353	0.15282
4.394	0.15167
4.435	0.15041
4.476	0.14907
4.517	0.14769
4.558	0.14624
4.599	0.14462
4.639	0.14262
4.680	0.13987
4.721	0.13589
4.762	0.13347
4.803	0.08961

X(cm) = 1.998 Npts = 42
R_SURFACE = 3.694
R_SHOCK = 5.317 SHOCK ANGLE = 27.5 Degrees

R(cm)	RHO/RHOT
3.699	0.13825
3.739	0.13974
3.778	0.14013
3.818	0.13989
3.858	0.13947
3.897	0.13922
3.937	0.13943
3.976	0.14031
4.016	0.14198
4.056	0.14451
4.095	0.14787
4.135	0.15199
4.175	0.15674
4.214	0.16196
4.254	0.16744
4.293	0.17298
4.333	0.17834
4.373	0.18331
4.413	0.18769
4.452	0.19130
4.492	0.19400
4.532	0.19568
4.571	0.19628
4.611	0.19581
4.650	0.19429
4.690	0.19183
4.730	0.18855
4.769	0.18465
4.809	0.18034
4.848	0.17585
4.888	0.17144
4.928	0.16735
4.968	0.16378
5.007	0.16089
5.047	0.15874
5.086	0.15723
5.126	0.15607
5.166	0.15462
5.205	0.15167
5.245	0.14492
5.285	0.13171
5.324	0.08961

X(cm) = 2.996 Npts = 42
R_SURFACE = 4.270
R_SHOCK = 5.868SHOCK ANGLE = 27.5 Degrees

R(cm)	RHO/RHOT
4.276	0.16434
4.315	0.16485
4.354	0.16527
4.393	0.16585
4.432	0.16678
4.471	0.16823
4.510	0.17030
4.549	0.17305
4.588	0.17648
4.627	0.18057
4.666	0.18522
4.705	0.19033
4.744	0.19574
4.783	0.20131
4.822	0.20685
4.861	0.21219
4.900	0.21715
4.939	0.22158
4.978	0.22533
5.017	0.22830
5.056	0.23038
5.095	0.23153
5.134	0.23174
5.173	0.23101
5.212	0.22941
5.251	0.22702
5.290	0.22395
5.329	0.22034
5.368	0.21634
5.407	0.21211
5.446	0.20781
5.485	0.20355
5.525	0.19943
5.563	0.19548
5.602	0.19165
5.642	0.18778
5.681	0.18354
5.719	0.17837
5.758	0.17141
5.797	0.16162
5.836	0.15607
5.876	0.08961

X(cm) = 3.991 Npts = 42
R_SURFACE = 4.845
R_SHOCK = 6.592SHOCK ANGLE = 35.7 Degrees

R(cm)	RHO/RHOT
4.851	0.17144
4.894	0.17217
4.936	0.17418
4.979	0.17712
5.022	0.18074
5.064	0.18483
5.107	0.18925
5.150	0.19389
5.193	0.19864
5.235	0.20343
5.278	0.20818
5.320	0.21284
5.363	0.21732
5.406	0.22156
5.448	0.22551
5.491	0.22909
5.534	0.23225
5.576	0.23494
5.619	0.23711
5.662	0.23872
5.704	0.23975
5.747	0.24019
5.790	0.24003
5.832	0.23928
5.875	0.23798
5.917	0.23615
5.960	0.23384
6.003	0.23109
6.046	0.22797
6.088	0.22452
6.131	0.22080
6.174	0.21683
6.216	0.21264
6.259	0.20823
6.302	0.20359
6.344	0.19868
6.387	0.19344
6.430	0.18785
6.472	0.18192
6.515	0.17606
6.557	0.17281
6.600	0.08961

X(cm) = 4.980 Npts = 42
R_SURFACE = 5.415
R_SHOCK = 7.405 SHOCK ANGLE = 40.2 Degrees

R(cm)	RHO/RHOT
5.428	0.19342
5.477	0.19362
5.525	0.19533
5.574	0.19830
5.622	0.20227
5.671	0.20701
5.719	0.21229
5.767	0.21791
5.816	0.22368
5.864	0.22944
5.913	0.23503
5.961	0.24032
6.010	0.24519
6.058	0.24956
6.107	0.25333
6.155	0.25644
6.204	0.25886
6.252	0.26055
6.301	0.26151
6.349	0.26174
6.397	0.26126
6.446	0.26011
6.494	0.25834
6.543	0.25601
6.591	0.25319
6.640	0.24997
6.688	0.24643
6.737	0.24267
6.785	0.23878
6.834	0.23487
6.882	0.23103
6.931	0.22734
6.979	0.22388
7.028	0.22071
7.076	0.21786
7.124	0.21533
7.173	0.21308
7.221	0.21103
7.270	0.20905
7.318	0.20699
7.367	0.20505
7.415	0.08961

X(cm) = 5.183 Npts = 42
R_SURFACE = 5.528
R_SHOCK = 7.557 SHOCK ANGLE = 40.3 Degrees

R(cm)	RHO/RHOT
5.534	0.17265
5.584	0.17647
5.633	0.18063
5.683	0.18517
5.732	0.19008
5.782	0.19533
5.832	0.20084
5.881	0.20652
5.931	0.21227
5.980	0.21797
6.030	0.22352
6.079	0.22880
6.129	0.23373
6.178	0.23822
6.228	0.24221
6.278	0.24563
6.327	0.24845
6.377	0.25065
6.426	0.25223
6.476	0.25319
6.525	0.25356
6.575	0.25338

6.625	0.25269
6.674	0.25154
6.724	0.25000
6.773	0.24812
6.823	0.24595
6.872	0.24355
6.922	0.24097
6.971	0.23824
7.021	0.23537
7.070	0.23237
7.120	0.22924
7.169	0.22592
7.219	0.22238
7.269	0.21855
7.318	0.21434
7.368	0.20970
7.417	0.20462
7.467	0.19936
7.516	0.19555
7.566	0.08961

X(cm) = 6.173 Npts = 42
R_SURFACE = 5.540
R_SHOCK = 8.433 SHOCK ANGLE = 40.4 Degrees

R(cm)	RHO/RHOT
5.554	0.06616
5.625	0.06799
5.695	0.06949
5.766	0.07142
5.836	0.07425
5.907	0.07820
5.978	0.08333
6.048	0.08959
6.119	0.09682
6.189	0.10485
6.260	0.11345
6.330	0.12240
6.401	0.13151
6.472	0.14057
6.542	0.14943
6.613	0.15796
6.683	0.16605
6.754	0.17363
6.824	0.18066
6.895	0.18711
6.965	0.19298
7.036	0.19827
7.107	0.20300
7.177	0.20717
7.248	0.21082
7.318	0.21395
7.389	0.21656
7.459	0.21866
7.530	0.22022
7.601	0.22123
7.671	0.22166
7.742	0.22147
7.812	0.22063
7.883	0.21911
7.953	0.21688
8.024	0.21393
8.094	0.21027
8.165	0.20593
8.235	0.20101
8.306	0.19583
8.376	0.19180
8.447	0.08961

X(cm) = 7.173 Npts = 42
R_SURFACE = 5.540
R_SHOCK = 9.297SHOCK ANGLE = 40.4 Degrees

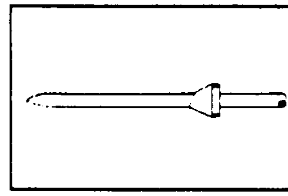
R(cm)	RHO/RHOT
5.562	0.06949
5.654	0.07051
5.745	0.07107
5.837	0.07135
5.929	0.07162
6.020	0.07220
6.112	0.07336
6.203	0.07533
6.295	0.07827
6.386	0.08223
6.478	0.08722
6.569	0.09315
6.661	0.09986
6.752	0.10716
6.844	0.11483
6.936	0.12262
7.027	0.13029
7.119	0.13763
7.210	0.14446
7.302	0.15064
7.393	0.15610
7.485	0.16081
7.576	0.16481
7.668	0.16819
7.760	0.17110
7.851	0.17370
7.943	0.17620
8.035	0.17877
8.126	0.18159
8.218	0.18477
8.309	0.18835
8.401	0.19227
8.492	0.19636
8.584	0.20030
8.676	0.20363
8.767	0.20577
8.859	0.20601
8.950	0.20367
9.042	0.19822
9.133	0.18996
9.225	0.18441
9.317	0.08961

X(cm) = 8.194 Npts = 41
R_SURFACE = 5.540
R_SHOCK =10.090 SHOCK ANGLE = 40.5 Degrees

R(cm)	RHO/RHOT
5.571	0.06075
5.792	0.06737
5.903	0.07010
6.014	0.07233
6.125	0.07420
6.235	0.07597
6.346	0.07786
6.457	0.08011
6.568	0.08286
6.679	0.08620
6.790	0.09015
6.900	0.09467
7.011	0.09966
7.122	0.10501
7.233	0.11057
7.343	0.11619
7.454	0.12175
7.565	0.12713
7.676	0.13226
7.786	0.13708
7.898	0.14160
8.008	0.14582
8.119	0.14981
8.230	0.15365
8.341	0.15741
8.451	0.16119
8.562	0.16506
8.673	0.16908
8.784	0.17325
8.894	0.17753
9.005	0.18182
9.116	0.18596
9.227	0.18967
9.338	0.19260
9.449	0.19427
9.559	0.19404
9.670	0.19101
9.781	0.18379
9.892	0.16962
10.002	0.14010
10.113	0.08961

*********************************END OF FILE***********************

Ref.: 12, 52
Author: Brown, J. D., *et al*
Geometry: Axisymmetric Ogive-Cylinder with Skewed Flare
Mach number: 3
Data: p_{wall}, flowfield surveys (LDV)



Brown, J.D., Brown, J.L. and Kussoy, M.I., "A Documentation of Two- and Three-Dimensional Shock-Separated Turbulent Boundary Layers," *NASA TM 101008*, July 1988.

Kussoy, M.I., Brown, J.D., Brown, J.L., Lockman, W.K. and Horstman, C.C., "Fluctuations and Massive Separation in Three-Dimensional Shock-Wave/Boundary-Layer Interactions," *Intl. Symp. on Transport Phenomena in Turbulent Flows, 2nd*, 1988, pp. 875-887.

Data are reported from a supersonic flow over an axisymmetric body of 5.02 cm diameter, aligned with the wind tunnel axis and supporting a turbulent boundary layer. A 3-D shock wave was generated by a 30° half-angle conical flare mounted on the cylinder with the flare axis inclined at an angle α to the cylinder axis. Measurements were made in the upper symmetry plane of the test body, and consisted of mean surface pressures and both mean and turbulence data from LDV surveys of the flowfield for α = 0, 5, and 10 degrees.

Unfortunately, this extensive dataset was not available in machine-readable form at the time of this writing. We have manually entered a subset of the data, namely surface pressures and every other flowfield survey for the α = 10° case only, and it is that which appears in the following tabulation. Users of these data are urged to consult the cited reference for a full data tabulation and discussion of the experiment.

Some nomenclature is defined at the beginning of the data tabulation. Additional definitions of terms used in the tables are given below:

CP ≡ pressure coefficient
UMEAN ≡ u/u_∞
VMEAN ≡ v/v_∞

$U2 \equiv \overline{u'^2}$

$V2 \equiv \overline{v'^2}$

$UV \equiv \overline{u'v'}$

$U2V2 \equiv 0.75(\overline{u'^2}+\overline{v'^2})/u_\infty^2$

GMINUS ≡ reverse-flow intermittency, *ie* the percentage of time that the flow is reversed at a given point

************Brown, Brown, and Kussoy Mach 3 Ogive-Cyl-Skewed Flare*************

************NOMINAL TEST CONDITIONS AND MEASUREMENT UNCERTAINTIES**************

Quantity	Value	Uncertainty
PT (stagnation pressure)	1.7 atm	±0.4%
TT (total temperature)	265K	±7.0%
M_∞ (freestream Mach number)	2.85	±0.9%
u_∞ (freestream velocity)	577 m/s	±1.9%
Re_∞ (unit Reynolds number)	16 x 106 m-1	---
δ_o (incoming b.l. thickness)	1.10cm	±4.5%
Cfo (incoming skin fric. coeff.)	0.00175	±5%
p(x) (mean wall pressure)	---	±5%
mean velocity components	---	±5%
turbulent stresses	---	±15%

********DISTRIBUTION OF SURFACE PRESSURE VS. STREAMWISE COORDINATE (x)*********

α = 10deg; Test 47; Runs 829 and 830; All Frames
PT = 1.7006 atm; TT = 259.6 K; Re/m = 0.1690E+08; M_∞ = 2.8266

X (CM)	P/PT	CP
-8.500	0.3427E-01	-0.5294E-02
-8.000	0.3523E-01	-0.1163E-02
-6.500	0.3387E-01	-0.7282E-02
-6.000	0.3473E-01	-0.3334E-02
-5.500	0.3483E-01	-0.2808E-02
-5.000	0.3456E-01	-0.4199E-02
-4.500	0.3750E-01	0.1032E-02
-3.500	0.5842E-01	0.1169E+00
-3.000	0.6236E-01	0.1363E+00
-2.500	0.6528E-01	0.1510E+00
-2.000	0.6549E-01	0.1516E+00
-1.500	0.6578E-01	0.1541E+00
-1.000	0.6695E-01	0.1589E+00
-0.500	0.6792E-01	0.1649E+00
0.000	0.7589E-01	0.2041E+00
0.766	0.9148E-01	0.2834E+00
1.379	0.1248E+00	0.4515E+00
1.915	0.1047E+00	0.3497E+00
2.451	0.1938E+00	0.8003E+00
2.988	0.2165E+00	0.9150E+00
3.983	0.2394E+00	0.1031E+01

*****************************LDV FLOWFIELD DATA**********************************

α = 10deg; X = -6.500cm; Obtained 10/1/85-17:53:38
PT = 1.7 atm; TT = 271.0 K; u_∞ = 578.0 m/s

Y (CM)	UMEAN	VMEAN	U2	V2	UV	U2V2	GMINUS
0.051	0.6867	5.1261E-03	5.232E-03	2.335E-03	-1.190E-03	5.676E-03	0.000E+00
0.102	0.7421	6.0740E-03	4.160E-03	1.960E-03	-1.075E-03	4.590E-03	0.000E+00
0.152	0.7733	5.5033E-03	3.778E-03	1.772E-03	-1.077E-03	4.163E-03	0.000E+00
0.203	0.7992	5.2813E-03	3.355E-03	1.653E-03	-1.000E-03	3.756E-03	0.000E+00
0.254	0.8218	4.5980E-03	3.113E-03	1.559E-03	-9.547E-04	3.504E-03	0.000E+00
0.317	0.8443	4.1875E-03	2.751E-03	1.460E-03	-8.826E-04	3.159E-03	0.000E+00
0.381	0.8670	5.0013E-03	2.417E-03	1.326E-03	-7.878E-04	2.807E-03	0.000E+00
0.444	0.8889	3.1890E-03	2.170E-03	1.166E-03	-6.895E-04	2.502E-03	0.000E+00
0.508	0.9095	3.1548E-03	1.860E-03	1.036E-03	5.826E-04	2.172E-03	0.000E+00
0.572	0.9274	2.8103E-03	1.602E-03	8.786E-04	-4.732E-04	1.860E-03	0.000E+00
0.635	0.9409	3.6600E-03	1.378E-03	7.499E-04	-3.931E-04	1.596E-03	0.000E+00
0.698	0.9592	6.1142E-03	1.036E-03	6.379E-04	-2.668E-04	1.255E-03	0.000E+00
0.762	0.9701	6.6672E-03	8.437E-04	5.164E-04	-1.967E-04	1.020E-03	0.000E+00
0.825	0.9810	7.2850E-03	6.430E-04	3.956E-04	-1.406E-04	7.790E-04	0.000E+00
0.889	0.9897	7.9275E-03	4.208E-04	2.904E-04	-8.006E-05	5.335E-04	0.000E+00
1.016	0.9992	8.5083E-03	2.207E-04	1.973E-04	-3.930E-05	3.135E-04	0.000E+00
1.143	1.0024	1.0894E-02	1.588E-04	1.572E-04	-1.346E-05	2.369E-04	0.000E+00
1.270	1.0035	1.0887E-02	1.637E-04	1.650E-04	-9.350E-06	2.465E-04	0.000E+00
1.397	1.0008	1.0484E-02	1.270E-04	1.296E-04	1.187E-06	1.924E-04	0.000E+00
1.524	1.0013	9.8296E-03	1.196E-04	1.225E-04	-2.217E-06	1.816E-04	0.000E+00

1.778	1.0006	9.3038E-03	1.174E-04	1.160E-04	1.944E-06	1.751E-04	0.000E+00
2.032	0.9999	1.1037E-02	1.237E-04	1.252E-04	4.832E-06	1.867E-04	0.000E+00

α = 10deg; X = -4.500cm; Obtained 10/1/85-21:18:59
PT = 1.7 atm; TT = 271.0 K; u_∞ = 578.0 m/s

Y (CM)	UMEAN	VMEAN	U2	V2	UV	U2V2	GMINUS
0.051	0.6783	1.6354E-02	1.541E-02	3.561E-03	-1.674E-03	1.423E-02	2.259E-03
0.102	0.7378	1.7058E-02	1.014E-02	2.930E-03	-1.956E-03	9.800E-03	5.745E-04
0.152	0.7734	1.6377E-02	7.325E-03	2.622E-03	-1.966E-03	7.461E-03	7.659E-05
0.203	0.8037	1.4286E-02	5.386E-03	2.292E-03	-1.798E-03	5.759E-03	3.833E-05
0.254	0.8286	1.1434E-02	4.400E-03	2.145D-03	-1.632E-03	4.908E-03	0.000E+00
0.317	0.8538	9.8650E-03	3.795E-03	1.981E-03	-1.485E-03	4.332E-03	0.000E+00
0.381	0.8773	8.5000E-03	2.822E-03	1.692E-03	-1.111E-03	3.386E-03	0.000E+00
0.444	0.8994	6.8690E-03	2.283E-03	1.433E-03	-7.983E-04	2.787E-03	0.000E+00
0.508	0.9146	4.2111E-03	1.913E-03	1.158E-03	-6.643E.04	2.304E-03	0.000E+00
0.572	0.9335	3.6193E-03	1.671E-03	9.673E-04	-5.374E-04	1.978E-03	0.000E+00
0.635	0.9489	3.8295E-03	1.274E-03	7.842E-04	-3.538E-04	1.543E-03	0.000E+00
0.698	0.9652	4.3528E-03	9.733E-04	6.218E-04	-2.044E-04	1.196E-03	0.000E+00
0.762	0.9738	4.2056E-03	8.657E-04	5.473E-04	-1.901E-04	1.060E-03	0.000E+00
0.825	0.9829	5.4869E-03	6.463E-04	4.324E-04	-1.289E-04	8.090E-04	0.000E+00
0.889	0.9894	5.9883E-03	4.726E-04	3.528E-04	-8.015E-05	6.191E-04	0.000E+00
1.016	1.0019	8.1437E-03	2.671E-04	2.331E-04	-2.167E-05	3.752E-04	0.000E+00
1.143	1.0036	7.5632E-03	2.235E-04	2.191E-04	-9.908E-06	3.319E-04	0.000E+00
1.270	1.0049	7.0466E-03	1.820E-04	1.809E-04	3.831E-05	2.722E-04	0.000E+00
1.397	1.0030	5.2312E-03	1.808E-04	1.841E-04	3.950E-05	2.736E-04	0.000E+00
1.524	1.0037	6.7394E-03	1.551E-04	1.535E-04	1.695E-05	2.314E-04	0.000E+00
1.778	1.0012	5.3627E-03	1.477E-04	1.463E-04	-3.493E-07	2.205E-04	0.000E+00
2.032	1.0000	3.4085E-03	1.449E-04	1.450E-04	2.271E-06	2.174E-04	0.000E+00

α = 10deg; X = -2.500cm; Obtained 10/1/85-22:55:33
PT = 1.7 atm; TT = 271.0 K; u_∞ = 578.0 m/s

Y (CM)	UMEAN	VMEAN	U2	V2	UV	U2V2	GMINUS
0.051	0.0554	1.0379E-02	3.204E-02	1.122E-02	2.179E-03	3.244E-02	4.059E-01
0.102	0.1574	1.9333E-02	4.038E-02	1.129E-02	1.721E-03	3.876E-02	2.268E-01
0.152	0.2595	3.1679E-02	4.189E-02	1.152E-02	1.278E-03	4.006E-02	1.077E-01
0.203	0.3480	4.3897E-02	4.484E-02	9.930E-03	1.972E-03	4.108E-02	5.902E-02
0.254	0.4341	6.3681E-02	4.008E-02	1.013E-02	1.958E-03	3.766E-02	2.137E-02
0.317	0.5176	8.6482E092	3.477E-02	8.763E-03	1.553E-03	3.265E-02	7.774E-03
0.381	0.5799	1.0075E-01	2.928E-02	7.752E-03	1.092E-03	2.777E-02	3.064E-03
0.444	0.6399	1.1602E-01	2.325E-02	6.678E-03	-4.716E-05	2.245E-02	1.264E-03
0.508	0.6921	1.2262E-01	1.731E-02	5.421E-03	-9.957E-04	1.705E-02	2.298E-04
0.572	0.7251	1.2879E-01	1.459E-02	4.771E-03	-1.430E-03	1.452E-02	3.064E-04
0.635	0.7516	1.3559E-01	1.235E-02	4.351E-03	-2.254E-03	1.253E-02	3.833E-05
0.698	0.7889	1.3541E-01	1.001E-02	4.089E-03	-2.614E-03	1.057E-02	3.833E-05
0.762	0.8181	1.3326E-01	9.162E-03	4.132E-03	-3.292E-03	9.070E-03	3.833E-05
0.825	0.8567	1.23443-01	7.481E-03	4.042E-03	-3.784E-03	8.642E-03	0.000E+00
0.889	0.8863	1.1005E-01	6.543E-03	4.455E-03	-4.188E-03	8.248E-03	0.000E+00
1.016	0.9365	7.8938E-02	4.001E-03	4.802E-03	-3.816E-03	6.602E=03	0.000E+00
1.143	0.9701	4.8226E-02	2.095E-03	4.044E-03	-2.595E-03	4.605E-03	0.000E+00
1.270	0.9870	2.6826E-02	1.047E-03	2.624E-03	-1.444E-03	2.753E-03	0.000E+00
1.397	0.9972	1.1309E-02	4.720E-04	1.187E-03	-5.671E=04	1.244E-03	0.000E+00
1.524	1.0018	2.5373E-03	2.120E-04	4.123E-04	-1.418E-04	4.682E-04	0.000E+00
1.778	1.0015	6.9572E-04	1.345E-04	1.424E-04	3.416E-06	2.077E-04	0.000E+00
2.032	1.0000	3.0658E-04	1.327E-04	1.381E-04	2.413E-05	2.030E-04	0.000E+00

α = 10deg; X = -0.500cm; Obtained 10/2/85-20:30:21
PT = 1.7 atm; TT = 271.0 K; u_∞ = 578.0 m/s

Y (CM)	UMEAN	VMEAN	U2	V2	UV	U2V2	GMINUS
0.051	-0.1389	-7.8508E-03	1.480E-02	8.719E-03	2.534E-03	1.764E-02	8.796E-01
0.102	-0.1056	-1.5967E-02	1.879E-02	1.050E-02	2.450E-03	2.197E-02	8.130E-01
0.152	-0.0656	-2.0530E-02	2.331E-02	1.228E-02	2.036E-03	2.669E-02	7.221E-01
0.203	-0.0141	-1.9467E-02	3.095E-02	1.489E-02	2.345E-03	3.438E-02	5.995E-01
0.254	0.0400	-2.1900E-02	3.708E-02	1.563E-02	1.755E-03	3.953E-02	4.761E-01
0.317	0 1324	-1.9023E-02	4.394E-02	1.539E-02	1.037E-03	4.449E-02	3.006E-01
0.381	0.2066	-1.2768E-03	4.663E-02	1.678D-02	1.507E-03	4.755E-02	1.947E-01

0.444	0.2824	8.9795E-03	4.569E-02	1.615E-02	1.262E-03	4.637E-02	1.160E-01
0.508	0.3572	2.6433E-02	4.245E-02	1.609E-02	1.387E-03	4.390E-02	5.843E-02
0.572	0.4144	3.6887E-02	3.949E-02	1.570E-02	1.633E-03	4.139E-02	3.174E-02
0.635	0.4772	5.4385E-02	3.520E-02	1.473E-02	1.966E-03	3.745E-02	1.457E-02
0.698	0.5253	6.9559E-02	2.941E-02	1.390E-02	1.568E-03	3.248E-02	7.324E-03
0.762	0.5739	8.1608E-02	2.773E-02	1.229E-02	2.381E-03	3.002E-02	3.743E-03
0.825	0.6142	9.6120E-02	2.233E-02	1.147E-02	1.494E-03	2.535E-02	1.383E-03
0.889	0.6738	1.1551E-01	1.906E-02	8.730E-03	1.074E-03	2.084E-02	8.138E-04
1.016	0.7285	1.3486E-01	1.295E-02	6.877E-03	1.049E-04	1.487E-02	2.441E-04
1.143	0.8122	1.5609E-01	7.481E-03	3.514E-03	-2.419E-04	8.246E-03	0.000E+00
1.270	0.8554	1.6503E-01	4.650E-03	2.149E-03	-2.047E-04	5.099E-03	0.000E+00
1.397	0.8959	1.7128E-01	1.507E-03	8.701E-04	-3.639E-04	1.783E-03	0.000E+00
1.524	0.9073	1.6842E-01	8.890E-04	7.521E-04	-3.510E-04	1.231E-03	0.000E+00
1.778	0.9242	1.4639E-01	6.027E-04	1.554E-03	-7.333E-04	1.617E-03	0.000E+00
2.032	0.9608	6.9851E-02	1.154E-03	3.881E-03	-1.930E-03	3.776E-03	0.000E+00
2.286	9.9909	1.4258E-02	4.583E-04	1.394E-03	-6.493E-04	1.389E-03	0.000E+00
2.540	0.9992	2.3703E-03	1.318E-04	1.761E-04	-2.875E-05	2.309E-04	0.000E+00
2.794	1.0002	-1.5291E-04	1.048E-04	1.141E-04	8.940E-06	1.641E-04	0.000E+00
3.048	1.0000	4.1733E-05	1.335E-04	1.348E-04	1.287E-05	2.012E-04	0.000E+00

α = 10deg; X = 0.766cm; Obtained 10/4/85-20:36:58
PT = 1.7 atm; TT = 271.0 K; u_∞ = 578.0 m/s

Y (CM)	UMEAN	VMEAN	U2	V2	UV	U2V2	GMINUS
0.051	0.0938	6.9128E-03	3.605E-02	2.202E-02	1.036E-02	4.355E-02	3.508E-01
0.102	0.1731	3.6921E-03	4.779E-02	2.037E-02	7.392E-03	5.112E-02	2.482E-01
0.152	0.2508	5.3503E-03	5.199E-02	2.122E-02	6.623E-03	5.491E-02	1.682E-01
0.203	0.3154	1.5617E-02	5.345E-02	2.103E-02	6.917E-03	5.586E-02	1.1153-01
0.254	0.3714	3.2674E-02	5.045E-02	2.108E-02	7.631E-03	5.365E-02	7.389E-02
0.317	0.4365	5.6914E-02	4.482E-02	2.010E-02	7.549E-03	4.869E-02	4.141E-02
0.381	0.4797	7.6382E-02	4.022E-02	1.892E-02	6.817E-03	4.435E-02	2.461E-02
0.444	0.5243	1.0017E-01	3.609E-02	1.750E-02	6.044E-03	4.019E-02	1.550E-02
0.508	0.5862	1.3067E-01	2.857E-02	1.502E-02	4.498E-03	3.269E-02	6.901E-03
0.572	0.6147	1.4552E-01	2.518E-02	1.348E-02	3.592E-03	2.900E-02	3.841E-03
0.635	0.6511	1.6168E-01	2.238E-02	1.216E-02	2.984E-03	2.590E-02	3.776E-03
0.698	0.6941	1.8118E-01	1.788E-02	9.740E-03	1.781E-03	2.071E-02	1.042E-03
0.762	0.7335	1.9219E-01	1.499E-02	7.432E-03	1.112E-03	1.682E-02	5.859E-04
0.825	0.7581	1.9709E-01	1.274E-02	6.437E-03	4.142E-04	1.438E-02	3.906E-04
0.889	0.8024	2.0503E-01	9.698E-02	4.419E-03	-5.552E-04	1.059E092	0.000E+00
1.016	0.8479	2.0938E-01	5.271E-03	2.522E-03	-1.197E-03	5.845E-03	0.000E+00
1.143	0.8806	2.0122E-01	2.628E-03	1.599E-03	-1.070E-03	3.171E-03	0.000E+00
1.270	0.8965	1.9157E-01	1.244E-03	1.019E-03	-7.242E-04	1.698E-03	0.000E+00
1.397	0.9051	1.8215E-01	6.869E-04	7.159E-04	-4.845E-04	1.052E-03	0.000E+00
1.524	0.9157	1.6551E-01	4.170E-04	7.050E-04	-3.357E-04	8.415E-04	0.000E+00
1.778	0.9328	1.3095E-01	6.554E-04	2.088E-03	-9.597E-04	2.057E-03	0.000E+00
2.032	0.9607	7.3758E-02	1.027E-03	3.614E-03	-1.739E-03	3.481E-03	0.000E+00
2.286	0.9936	1.0193E-02	3.960E-04	1.188E-03	-5.490E-04	1.189E-03	0.000E+00
2.540	1.0000	3.7215E-04	1.196E-04	1.715E-04	-2.448E-05	2.183E-04	0.000E+00
2.794	0.9997	5.7221E-05	1.103E-04	1.176E-04	1.175E-05	1.710E-04	0.000E+00
3.048	1.0000	-9.8584E=04	1.099E-04	1.162E-04	1.306E-05	1.696E-04	0.000E+00

α = 10deg; X = 1.915cm; Obtained 10/3/85-21:09:35
PT = 1.7 atm; TT = 271.0 K; u_∞ = 578.0 m/s

Y (CM)	UMEAN	VMEAN	U2	V2	UV	U2V2	GMINUS
0.051	0.3751	1.9584E-01	2.608E-02	2.048E-02	4.301E-03	3.492E-02	1.224E-02
0.102	0.4454	1.8995E-01	2.748E-02	1.869E-02	3.497E-03	3.463E-02	8.919E-03
0.152	0.5009	1.9573E-01	2.619E-02	1.675E-02	3.989E-03	3.221E-02	7.031E-03
0.203	0.5396	2.0072E-01	2.337E-02	1.579E-02	4.008E-03	2.937E-02	3.906E-03
0.254	0.5773	2.1769E-01	2.078E-02	1.413E-02	4.228E-03	2.619E-02	4.362E-03
0.317	0.6160	2.4744E-01	1.473E-02	1.173E-02	2.975E-03	1.985E-02	1.302E-03
0.381	0.6423	2.7257E-01	1.168E-02	9.636E-03	2.375E-03	1.599E-02	1.107E-03
0.444	0.6650	2.8790E-01	9.628E-03	8.027E-03	2.218E-03	1.324E-02	1.302E-04
0.508	0.6880	3.1036E-01	6.951E-03	5.829E-03	9.858E-04	9.585E-03	2.604E-04
0.572	0.7074	3.1784E-01	6.062E-03	4.837E-03	5.651E-04	8.174E-03	1.302E-04
0.635	0.7221	3.2509E-01	4.830E-03	3.368E-03	-8.414E-05	6.148E-03	6.515E-05
0.698	0.7378	3.2500E-01	4.401E-03	2.846E-03	-4.427E-04	5.436E-03	0.000E+00
0.762	0.7524	3.2185E-01	3.953E-03	2.187E-03	-9.958E-04	4.605E-03	0.000E+00
0.825	0.7703	3.1118E-01	4.160E-03	2.313E-03	-1.450E-03	4.855E-03	0.000E+00
0.889	0.7891	2.9734E-01	4.236E-03	2.480E-03	-2.101E-03	5.037E-03	0.000E+00

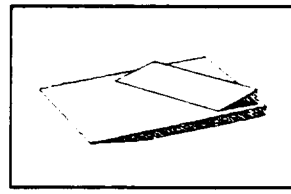
1.016	0.8282	2.6234E-01	4.756E-03	3.522E-03	-3.424E-03	6.209E-03	0.000E+00
1.143	0.8727	2.1651E-01	4.068E-03	3.654E-03	-3.444E-03	5.792E-03	0.000E+00
1.270	0.9037	1.7947E-01	2.447E-03	2.846E-03	-2.357E-03	3.969E.03	0.000E+00
1.397	0.9307	1.4379E-01	1.137E-03	2.272E-03	-1.352E-03	2.557E-03	0.000E+00
1.524	0.9453	1.1604E-01	9.085E-04	2.571E-03	-1.311E-03	2.609E-03	0.000E+00
1.778	0.9832	4.1551E-02	8.782E-04	2.970E-03	-1.460E-03	2.886E-03	0.000E+00
2.032	1.0012	3.3496E-03	1.983E-04	4.785E-04	-1.889E-04	5.077E-04	0.000E+00
2.286	1.0006	-1.4544E-03	9.893E-05	1.234E-04	-1.208E-05	1.667E-04	0.000E+00
2.540	1.0001	-5.0309E-03	8.689E-05	9.737E-05	3.415E-06	1.382E-04	0.000E+00

α = 10deg; X = 3.447cm; Obtained 10/3/85-22:49:02
PT = 1.7 atm; TT = 271.0 K; u_∞ = 578.0 m/s

Y (CM)	UMEAN	VMEAN	U2	V2	UV	U2V2	GMINUS
0.051	0.4640	3.6066E-01	9.306E-03	8.936E-03	3.745E-03	1.368E-02	0.000E+00
0.102	0.5074	3.5398E-01	8.700E-03	7.810E-03	1.681E-03	1.238E-02	6.509E-05
0.152	0.5382	3.5790E-01	7.272E-03	6.454E-03	1.054E-03	1.029E-02	6.509E-05
0.203	0.5554	3.5421E-01	6.957E-03	6.376E-03	7.977E-04	1.000E-02	0.000E+00
0.254	0.5697	3.5839E-01	5.754E-03	5.333E-03	6.779E-04	8.316E-03	6.509E-05
0.317	0.5845	3.7119E-01	4.310E-03	4.085E-03	1.286E-04	6.296E-03	1.953E-04
0.381	0.5902	3.7947E-01	3.481E-03	3.466E-03	6.452E-05	5.210E-03	6.509E-05
0.444	0.5979	3.8270E-01	3.290E-03	2.997E-03	-1.984E-05	4.716E-09	0.000E+00
0.508	0.6019	3.9052E-01	2.768E-03	2.481E-03	-2.796E-05	3.937E-03	0.000E+00
0.572	0.6072	3.9539E-01	2.340E-03	1.913E-03	-1.907E-04	3.190E-03	0.000E+00
0.635	0.6057	3.9967E-01	2.147E-03	1.610E-03	-3.041E-04	2.818E-03	0.000E+00
0.698	0.6083	4.0180E-01	1.886E-03	1.366E-03	-2.112E-04	2.439E-03	0.000E+00
0.762	0.6094	4.0137E-01	1.954E-03	1.292E-03	-1.995E-04	2.435E-03	0.000E+00
0.825	0.6160	4.0039E-01	1.863E-03	1.111E-03	-1.816E-04	2.231E-03	0.000E+00
0.889	0.6154	3.9906E-01	1.816E-03	1.021E-03	-1.754E-05	2.127E-03	0.000E+00
1.016	0.6070	3.9207E-01	2.308E-03	1.123E-03	1.392E-04	2.573E-03	0.00E+000
1.143	0.6061	3.7149E-01	3.948E-03	1.419E-03	5.750E-04	4.025E-03	0.000E+00
1.270	0.5808	3.3562E-01	5.642E-03	1.646E-03	1.909E-04	5.466E-03	0.000E+00
1.397	0.5965	2.9490E-01	6.199E-03	2.925E-03	-2.499E-03	6.842E-03	0.000E+00
1.524	0.6548	2.4484E-01	8.903E-03	5.325E-03	-5.773E-03	1.067E-02	0.000E+00
2.032	1.0025	-1.0258E-02	1.371E-04	1.424E-04	-4.459E-05	2.096E-04	0.000E+00
2.286	1.0018	-0.5308E-03	7.891E-05	8.937E-05	5.628E-06	1.262E-04	0.000E+00
2.540	1.0001	-8.1080E-03	7.925E-05	8.752E-05	8.536E-06	1.251E-04	0.000E+00

****************************END OF FILE***

Ref.: 85, 48
Author: McKenzie, T. M., *et al*
Geometry: 3-D Swept Compression Corner
Mach number: 3
Data: p_{wall}, mean flowfield surveys ("cobra" probe)



Settles, G.S., Horstman, C.C. and McKenzie, T.M., "Flowfield Scaling of a Swept Compression Corner Interaction - A Comparison of Experiment and Computation," AIAA Paper 84-0096, 1984, and *AIAA Journal*, Vol. 24, May 1986, pp. 744-752.

Knight, D.D., Horstman, C.C., Bogdonoff, S.M., Raufer, D. and Ketchum, A., "Supersonic Turbulent Flow Past a Swept Compression Corner at Mach 3, Part II," *AIAA Paper 88-0310*, 1988.

The data include surface pressures and "cobra" yaw-probe surveys of the swept interaction generated by a swept compression corner mounted on the floor of a Mach 2.95 wind tunnel. The corner was swept back by 40 degrees from the normal to the freestream direction, and had a streamwise compression angle of 24 degrees. The freestream unit Reynolds number was 63 million/meter and the wall temperature was nearly adiabatic.

The compression corner was mounted with its apex 30 cm downstream from the exit of the wind tunnel nozzle. Cobra-probe data were taken at 14 stations in a vertical streamwise (x-y) plane located 8.89 cm (3.5 in) spanwise from the apex of the swept corner. The x-dimension given in the profile tables is defined such that its origin coincides with the compression corner location, values being positive downstream. The vertical traverse data are indexed by coordinate y.

The first three columns of the profile tables list y, pitot pressure, and yaw angle, repsectively. The final two columns denoted DELP and SENSITCOEF convey raw cobra-probe information which should be ignored by most users of this dataset.

The mean surface pressure data were taken on 4 streamwise "cuts" located at 2, 3, 4, and 5 inches from the apex of the swept corner. Here (x-xcorner) in the tables has the same meaning as x defined above for the surveys.

A similar set of measurements was also carried out on a flat plate with a thinner initial boundary layer. The comparison of these two datasets was used in Ref. 85 to confirm a scaling law for incoming boundary-layer thickness effects on such interactions. Unfortunately, incomplete data were available for the thin-boundary-layer case, so it is not tabulated here.

The incoming turbulent boundary layer for the tabulated data had an overall thickness of 1.54 cm, a displacement thickness of 0.408 cm, and a momentum thickness of 0.0807 cm. The incoming skin friction coefficient was 0.00116, and the wake-strength parameter of the boundary layer was 0.7.

The uncertainty of probe tip position was ± 0.02 cm in x and y. The experimenters found their data repeatable to ± 1%, and claimed an overall accuracy of ± 1% in yaw angle, though in retrospect that seems to have been wishful thinking.

McKenzie et al (24,40) Swept compression corner

Thick Boundary Layer

Wall Pressure

Experimental Surface Pressure Data

pressure.2	Experimental p/pinfinity at z = 2 inch
pressure.3	Experimental p/pinfinity at z = 3 inch
pressure.4	Experimental p/pinfinity at z = 4 inch
pressure.5	Experimental p/pinfinity at z = 5 inch
xcor.2	Experimental (x - xcorner)/deltainf at z = 2 inch
xcor.3	Experimental (x - xcorner)/deltainf at z = 3 inch
xcor.4	Experimental (x - xcorner)/deltainf at z = 4 inch
xcor.5	Experimental (x - xcorner)/deltainf at z = 5 inch

where pinfinity = 0.2096e5 Pa, xcorner = z tan lambda, lambda = 40 deg, and deltainf set equal to 0.5 inch.

pressure.2	xcor.2	pressure.3	xcor.3	pressure.4	xcor.4	pressure.5	xcor.5
0.1014E+01	-.3818E+01	0.9833E+00	-.5898E+01	0.1052E+01	-.4325E+01	0.1114E+01	-.4452E+01
0.1000E+01	-.3418E+01	0.1007E+01	-.5598E+01	0.1052E+01	-.4125E+01	0.1041E+01	-.4052E+01
0.9948E+00	-.3018E+01	0.1003E+01	-.5098E+01	0.1050E+01	-.3925E+01	0.1172E+01	-.3652E+01
0.9919E+00	-.2818E+01	0.1001E+01	-.4498E+01	0.1045E+01	-.3725E+01	0.1653E+01	-.3252E+01
0.9876E+00	-.2618E+01	0.1008E+01	-.3898E+01	0.1043E+01	-.3525E+01	0.1828E+01	-.2852E+01
0.9957E+00	-.2418E+01	0.9671E+00	-.3398E+01	0.1097E+01	-.3325E+01	0.1936E+01	-.2452E+01
0.9919E+00	-.2218E+01	0.9990E+00	-.3198E+01	0.1349E+01	-.3125E+01	0.2002E+01	-.2052E+01
0.9847E+00	-.2018E+01	0.9948E+00	-.2998E+01	0.1613E+01	-.2925E+01	0.2059E+01	-.1652E+01
0.1203E+01	-.1820E+01	0.9981E+00	-.2798E+01	0.1744E+01	-.2725E+01	0.2079E+01	-.1252E+01
0.1547E+01	-.1620E+01	0.1107E+01	-.2598E+01	0.1818E+01	-.2525E+01	0.2096E+01	-.1052E+01
0.1674E+01	-.1420E+01	0.1399E+01	-.2398E+01	0.1870E+01	-.2325E+01	0.2105E+01	-.8520E+00
0.1771E+01	-.1220E+01	0.1617E+01	-.2198E+01	0.1920E+01	-.2125E+01	0.2121E+01	-.6520E+00
0.1837E+01	-.1020E+01	0.1723E+01	-.1998E+01	0.1967E+01	-.1927E+01	0.2142E+01	-.4520E+00
0.1882E+01	-.8200E+00	0.1797E+01	-.1798E+01	0.1986E+01	-.1727E+01	0.2170E+01	-.2520E+00
0.1906E+01	-.6200E+00	0.1839E+01	-.1598E+01	0.2021E+01	-.1527E+01	0.2220E+01	-.1520E+00
0.1909E+01	-.4200E+00	0.1875E+01	-.1398E+01	0.2037E+01	-.1327E+01		
0.1959E+01	-.2200E+00	0.1924E+01	-.1198E+01	0.2051E+01	-.1127E+01		
0.2140E+01	-.2000E-01	0.1949E+01	-.9980E+00	0.2040E+01	-.9268E+00		
		0.1958E+01	-.7980E+00	0.2041E+01	-.7268E+00		
		0.1970E+01	-.5980E+00	0.2051E+01	-.5268E+00		
		0.1994E+01	-.3980E+00	0.2066E+01	-.3268E+00		
		0.2013E+01	-.1980E+00	0.2151E+01	-.1268E+00		
		0.2083E+01	-.9800E-01	0.2217E+01	0.4032E+00		
		0.2181E+01	0.4020E+00	0.2335E+01	0.6032E+00		
		0.2483E+01	0.8020E+00	0.2450E+01	0.8032E+00		
		0.2799E+01	0.1202E+01	0.2594E+01	0.1003E+01		
		0.3074E+01	0.1602E+01	0.2678E+01	0.1203E+01		
		0.3294E+01	0.2002E+01	0.2792E+01	0.1403E+01		
		0.3489E+01	0.2402E+01	0.2902E+01	0.1603E+01		
		0.3627E+01	0.2802E+01	0.3131E+01	0.2003E+01		
				0.3312E+01	0.2403E+01		
				0.3476E+01	0.2803E+01		

(24,40) Swept Compression Corner
Thick Boundary Layer
Cobra Probe Surveys

PO=100 PSIA
TO IS IN DATA FILES
FREESTREAM MACH NUMBER=2.93

DATA FORMAT:

RUN TEST TYPE NUM OF PTS STATION PO TO X
DATE TITLE
Y(METERS) PT(KPA) YAW(DEG) DELP(KPA) SENSITCOEF

DATA FILES FOR COBRA SURVEYS:

FILE	STATION	X(INCHES)
SRF23.DAT	2	-1.6
SRF25.DAT	3	-1.4
STA4M.DAT	4	-1.2
SRF29.DAT	5	-1.0
SRF30.DAT	6	-0.7
SRF33.DAT	7	-0.4
STA8M.DAT	8	-0.1
SRP12.DAT	10	0.7
SRP10.DAT	13	1.3
SRP11.DAT	14	1.5
STA15M.DAT	15	1.8
STA16M.DAT	16	2.1
STA17M.DAT	17	2.4
SRP24.DAT	18	3.0

Z=3.5 INCHES FOR ALL STATIONS
X = STREAMWISE DISTANCE FROM WEDGE CORNER
Z = SPANWISE DISTANCE FROM WEDGE APEX.

File SRF23.DAT

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2203 2 0 27  5       .6902E+06 258.5     .2196E+05-1.600
1982 265 COBRA PROBE SURVEYS 24,40;Z=3.5INS. ON FLOOR BY M.MCK.

 .2794E-03 .3887E+05-.5037E-01-842.7    -.1520E-02
 .1193E-02 .8146E+05-.4276E-01-1871.    -.1520E-02
 .2189E-02 .9668E+05-.4885E-01-1627.    -.1520E-02
 .3198E-02 .1107E+06-.5608E-01-20.86    -.1520E-02
 .4189E-02 .1290E+06-.5265E-01-851.1    -.1520E-02
 .5171E-02 .1403E+06-.5950E-01 163.1    -.1520E-02
 .6198E-02 .1496E+06-.4580E-01-3368.    -.1520E-02
 .7232E-02 .1585E+06-.5456E-01-2256.    -.1520E-02
 .8212E-02 .1687E+06-.4542E-01-4280.    -.1520E-02
 .9232E-02 .1810E+06-.4314E-01-3727.    -.1520E-02
 .1024E-01 .1971E+06-.3362E-01-3199.    -.1520E-02
 .1124E-01 .2060E+06-.3667E-01-2594.    -.1520E-02
 .1221E-01 .2078E+06-.2373E-01-4221.    -.1520E-02
 .1328E-01 .2213E+06-.1840E-01-3451.    -.1520E-02
 .1425E-01 .2279E+06-.1573E-01-2963.    -.1520E-02
 .1525E-01 .2300E+06-.1992E-01-2145.    -.1520E-02
 .1626E-01 .2328E+06-.2563E-01-1430.    -.1520E-02
 .1723E-01 .2343E+06-.1878E-01-420.9    -.1520E-02
 .1821E-01 .2345E+06-.1535E-01-1319.    -.1520E-02
 .1924E-01 .2339E+06-.1383E-01-1182.    -.1520E-02
 .2023E-01 .2333E+06-.1078E-01-1303.    -.1520E-02
 .2121E-01 .2344E+06-.7359E-02-442.2    -.1520E-02
 .2224E-01 .2350E+06 .9389E-02-456.7    -.1520E-02
 .2324E-01 .2352E+06 .1890E-01-572.7    -.1520E-02
 .2422E-01 .2349E+06 .1358E-01-301.6    -.1520E-02
 .2522E-01 .2344E+06 .4555E-01 181.1    -.1520E-02
 .2617E-01 .2344E+06 .1392      1236.   -.1520E-02
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File SRF25.DAT
..............
2203 4 0 26  5        .6902E+06 258.6     .2059E+05-1.400
1982 265 COBRA PROBE SURVEYS 24,40;Z=3.5INS. ON FLOOR BY M.MCK.

 .2794E-03 .3570E+05 2.555     -4018.     -.1520E-02
 .1279E-02 .7398E+05 2.554     -2784.     -.1520E-02
 .2258E-02 .1028E+06 2.559     -3694.     -.1520E-02
 .3276E-02 .1208E+06 2.541     -2523.     -.1520E-02
 .3760E-02 .1228E+06 2.201     -4216.     -.1520E-02
 .4770E-02 .1286E+06 .7352     -3558.     -.1520E-02
 .5786E-02 .1402E+06 .5099     -291.2     -.1520E-02
 .6778E-02 .1543E+06 .2610      1485.     -.1520E-02
 .7802E-02 .1647E+06-.2220E-01-2787.     -.1520E-02
 .8790E-02 .1722E+06-.1459E-01-3650.     -.1520E-02
 .9815E-02 .1813E+06 .6801E-01-3505.     -.1520E-02
 .1081E-01 .1950E+06 .5544E-01-2282.     -.1520E-02
 .1181E-01 .2088E+06 .6344E-01-1840.     -.1520E-02
 .1283E-01 .2176E+06 .6115E-01-1650.     -.1520E-02
 .1386E-01 .2224E+06 .7257E-01-1944.     -.1520E-02
 .1486E-01 .2276E+06 .7181E-01-1623.     -.1520E-02
 .1584E-01 .2299E+06 .7295E-01-1714.     -.1520E-02
 .1685E-01 .2339E+06 .6953E-01-612.5     -.1520E-02
 .1781E-01 .2321E+06 .6724E-01-804.1     -.1520E-02
 .1878E-01 .2318E+06 .6458E-01-116.8     -.1520E-02
 .1980E-01 .2328E+06 .6344E-01-155.4     -.1520E-02
 .2080E-01 .2339E+06 .5088E-01 77.54     -.1520E-02
 .2182E-01 .2328E+06 .4935E-01 105.6     -.1520E-02
 .2285E-01 .2329E+06-.2403     -2605.     -.1520E-02
 .2384E-01 .2317E+06-.4367     -4317.     -.1520E-02
 .2480E-01 .2333E+06-.4382     -3814.     -.1520E-02

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File STA4M.DAT
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2401 3 0 29  5        .6920E+06 271.0     .2148E+05-1.200
1982 267 COBRA PROBE SURVEYS 24,40;Z=3.5INS. ON FLOOR BY. M.MCK.

 .2794E-03 .3965E+05 49.15     -2209.     -.8825E-01
 .7462E-03 .4136E+05 16.13     -4383.     -.8825E-01
 .1830E-02 .7028E+05 3.782     -3060.     -.1520E-02
 .2816E-02 .1038E+06 3.780     -1154.     -.1520E-02
 .3783E-02 .1264E+06 3.775     -2981.     -.1520E-02
 .4796E-02 .1460E+06 3.764     -705.0     -.1520E-02
 .5788E-02 .1610E+06 3.581     -387.5     -.1520E-02
 .5995E-02 .1469E+06 3.390     -2210.     -.1520E-02
 .6517E-02 .1559E+06 2.161     -3632.     -.1520E-02
 .7015E-02 .1614E+06 1.603     -1201.     -.1520E-02
 .8040E-02 .1680E+06-.4634E-01-3897.     -.1520E-02
 .9037E-02 .1793E+06-.5319E-01-2567.     -.1520E-02
 .1006E-01 .1920E+06-.5053E-01-2108.     -.1520E-02
 .1105E-01 .2051E+06-.4824E-01-2853.     -.1520E-02
 .1207E-01 .2143E+06-.4672E-01-2898.     -.1520E-02
 .1307E-01 .2227E+06-.5015E-01-2303.     -.1520E-02
 .1410E-01 .2280E+06-.4749E-01-2549.     -.1520E-02
 .1508E-01 .2323E+06-.4254E-01-2698.     -.1520E-02
 .1602E-01 .2344E+06-.3781E-01-2324.     -.1520E-02
 .1700E-01 .2367E+06-.4161E-01-2184.     -.1520E-02
 .1799E-01 .2352E+06-.4542E-01-2595.     -.1520E-02
 .1901E-01 .2353E+06-.6293E-01-2309.     -.1520E-02
 .1998E-01 .2363E+06-.4352E-01-2016.     -.1520E-02
 .2098E-01 .2367E+06-.5532E-01-1520.     -.1520E-02
 .2203E-01 .2373E+06-.2677E-01-1335.     -.1520E-02
 .2303E-01 .2378E+06 .8628E-02-614.5     -.1520E-02
 .2399E-01 .2365E+06-.1573E-01-1142.     -.1520E-02
 .2497E-01 .2362E+06 .1434E-01-1236.     -.1520E-02
 .2592E-01 .2378E+06 .5202E-01 40.99     -.1520E-02

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File SRF29.DAT
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2301 1 0 29  5        .6900E+06 261.1     .2289E+05-1.000
1982 266 COBRA PROBE SURVEYS 24,40;Z=3.5INS. ON FLOOR BY M.MCK.

 .1373E-02 .5267E+05 29.26     -116.5     -.2259E-01
 .1394E-02 .5267E+05 29.27      103.8     -.2259E-01
 .1456E-02 .5331E+05 21.08     -4065.     -.2712E-01
 .2486E-02 .7898E+05 6.690     -2641.     -.1520E-02
 .2704E-02 .8222E+05 6.490     -2049.     -.1520E-02
 .3719E-02 .1168E+06 4.141     -1933.     -.1520E-02
 .4704E-02 .1389E+06 4.135     -1465.     -.1520E-02
 .5720E-02 .1597E+06 4.132      1381.     -.1520E-02
 .6746E-02 .1867E+06 4.124      1629.     -.1520E-02
 .7731E-02 .2077E+06 4.113      2658.     -.1520E-02
 .8753E-02 .2121E+06 3.683     -2052.     -.1520E-02
 .9778E-02 .2015E+06 3.042     -3364.     -.1520E-02
 .9994E-02 .1974E+06 2.862     -2710.     -.1520E-02
 .1100E-01 .2064E+06 .6852     -2478.     -.1520E-02
 .1201E-01 .2125E+06 .2606     -3394.     -.1520E-02
 .1305E-01 .2238E+06 .2610     -2734.     -.1520E-02
 .1405E-01 .2286E+06 .2580     -1790.     -.1520E-02
 .1503E-01 .2314E+06 .2610     -1229.     -.1520E-02
 .1607E-01 .2362E+06 .2644     -1327.     -.1520E-02
 .1703E-01 .2355E+06 .2538     -871.3     -.1520E-02
 .1804E-01 .2368E+06 .2614     -708.2     -.1520E-02
 .1903E-01 .2372E+06 .2587     -378.8     -.1520E-02
 .2003E-01 .2378E+06 .2606     -455.9     -.1520E-02
 .2105E-01 .2377E+06 .2584     -103.2     -.1520E-02
 .2206E-01 .2369E+06 .2610     -114.9     -.1520E-02
 .2306E-01 .2377E+06 .2599      552.8     -.1520E-02
 .2403E-01 .2402E+06 .2637     -66.69     -.1520E-02
 .2504E-01 .2390E+06 .2644     -459.6     -.1520E-02
 .2595E-01 .2392E+06 .3947      954.5     -.1520E-02

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File SRF30.DAT
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2303 1 0 45  5        .6911E+06 270.0     .2341E+05-0.700
1982 266 COBRA PROBE SURVEYS 24,40;Z=3.5INS. ON FLOOR BY M.MCK.

 .4362E-03 .5921E+05 99.09      44.60     -.7755E-01
 .9309E-03 .6112E+05 91.08      35.37     -.4808E-01
 .9672E-03 .6149E+05 91.11      6.650     -.4808E-01
 .1979E-02 .6321E+05 51.28      79.95     -.2211E-01
 .2005E-02 .6362E+05 51.29     -149.4     -.2211E-01
 .2024E-02 .6390E+05 49.68     -272.3     -.2211E-01
 .3029E-02 .7007E+05 25.96     -170.0     -.1384E-01
 .3054E-02 .6950E+05 25.97      38.38     -.1384E-01
 .3078E-02 .6951E+05 24.22     -194.3     -.1384E-01
 .3118E-02 .7264E+05 23.20     -56.21     -.1384E-01
 .3150E-02 .6840E+05 22.75      35.77     -.1384E-01
 .3170E-02 .7273E+05 21.63     -154.6     -.1384E-01
 .3197E-02 .7113E+05 22.75      381.2     -.1384E-01
 .3252E-02 .7329E+05 21.24     -34.52     -.1384E-01
 .3345E-02 .7401E+05 19.31     -206.8     -.1384E-01
 .3392E-02 .7271E+05 19.58     -314.2     -.1384E-01
 .3424E-02 .7467E+05 19.18     -261.1     -.1384E-01
 .3483E-02 .7438E+05 14.90     -3558.     -.1494E-01
 .3992E-02 .8603E+05 9.636     -3205.     -.1520E-02
 .4076E-02 .8610E+05 9.509     -3568.     -.1520E-02
 .4326E-02 .9707E+05 7.232     -2280.     -.1520E-02
 .4820E-02 .1028E+06 5.562     -2924.     -.1520E-02
 .5836E-02 .1316E+06 4.199     -1536.     -.1520E-02
 .6879E-02 .1578E+06 4.083     -645.8     -.1520E-02
 .7849E-02 .1842E+06 3.662     -2566.     -.1520E-02
 .8874E-02 .2131E+06 3.153     -3213.     -.1520E-02
 .9893E-02 .2302E+06 3.151     -1364.     -.1520E-02
 .1089E-01 .2593E+06 3.142      2340.     -.1520E-02
 .1189E-01 .2845E+06 3.227      1431.     -.1520E 02
 .1291E-01 .2810E+06 3.901      1097.     -.1520E 02
 .1341E 01 .2709E+06 3.929     -773.6     -.1520E 02
 .1441E-01 .2453E+06 2.858      1411.     -.1520E 02
 .1469E-01 .2412E+06 2.659      1621.     -.1520E 02
 .1515E-01 .2400E+06 1.328     -1286.     -.1520E 02
 .1619E-01 .2379E+06 .2344     -3211.     -.1520E-02
 .1714E-01 .2391E+06 .2333     -2552.     -.1520E-02
 .1815E-01 .2394E+06 .2238     -1849.     -.1520E-02
 .1914E-01 .2401E+06 .2302     -2010.     -.1520E-02
 .2015E-01 .2409E+06 .2207     -1853.     -.1520E 02
 .2116E-01 .2410E+06 .2378     -1404.     -.1520E-02
 .2219E-01 .2391E+06 .2272     -1850.     -.1520E 02
 .2317E-01 .2401E+06 .2325     -1276.     -.1520E-02
 .2414E-01 .2405E+06 .2393     -1400.     -.1520E-02
 .2517E-01 .2415E+06 .2374     -1186.     -.1520E-02
 .2609E-01 .2399E+06 .4042      458.3     -.1520E-02

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File SRF33.DAT
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2401 2 0 45  5        .6922E+06 270.4     .2213E+05-.4000
1982 267 COBRA PROBE SURVEYS 24,40;Z=3.5INS. ON FLOOR BY. M.MCK

 .2794E-03 .5968E+05 105.1      3390.     -.4310E-01
 .1323E-02 .6806E+05 82.14      95.78     -.4310E-01
 .1350E-02 .6809E+05 82.16      .8091     -.4310E-01
 .1369E-02 .6829E+05 82.80      116.3     -.4310E-01
 .1418E-02 .6817E+05 80.94      105.8     -.4310E-01
 .1440E-02 .6764E+05 81.25     -57.94     -.4310E-01
 .1466E-02 .6827E+05 80.19     -252.3     -.4310E-01
 .1962E-02 .6850E+05 70.14     -150.5     -.2270E-01
 .1995E-02 .6859E+05 70.16     -307.8     -.2270E-01
 .3016E-02 .6769E+05 49.13     -90.94     -.1562E-01
 .3039E-02 .6791E+05 49.12      53.52     -.1562E-01
 .3072E-02 .6780E+05 48.12     -228.1     -.1562E-01
 .3119E-02 .6710E+05 47.47     -342.4     -.1562E-01
 .3176E-02 .6784E+05 46.71      258.7     -.1562E-01
 .3212E-02 .6846E+05 46.21     -32.59     -.1562E-01
 .4228E-02 .7098E+05 29.24     -324.7     -.1336E-01
 .4248E-02 .7071E+05 29.24      111.0     -.1336E-01
 .4297E-02 .7061E+05 23.81     -3977.     -.1161E-01
 .5292E-02 .8326E+05 12.77     -3618.     -.1520E-02
 .5344E-02 .8184E+05 12.74     -3755.     -.1520E-02
 .5604E-02 .9382E+05 10.05     -3975.     -.1520E-02
 .5860E-02 .8880E+05 9.296     -3877.     -.1520E-02
 .6374E-02 .1007E+06 7.296     -2817.     -.1520E-02
 .6629E-02 .1083E+06 6.964     -3334.     -.1520E-02
 .7632E-02 .1290E+06 4.078     -4142.     -.1520E-02
 .8645E-02 .1662E+06 3.808     -4135.     -.1520E-02
 .9662E-02 .1861E+06 3.457     -2670.     -.1520E-02
 .1065E-01 .2129E+06 3.270     -649.5     -.1520E-02
 .1163E-01 .2407E+06 2.932     -1320.     -.1520E-02
 .1264E-01 .2674E+06 2.829      454.3     -.1520E-02
 .1368E-01 .2956E+06 2.838      379.5     -.1520E-02
 .1469E-01 .3132E+06 2.829      747.7     -.1520E-02
 .1566E-01 .3347E+06 2.822      2406.     -.1520E-02
 .1670E-01 .3350E+06 2.926     -48.28     -.1520E-02
 .1765E-01 .2918E+06 3.569     -3706.     -.1520E-02
 .1817E-01 .2609E+06 3.532     -843.1     -.1520E-02
 .1839E-01 .2683E+06 3.266     -2677.     -.1520E-02
 .1941E-01 .2417E+06 .8488      1815.     -.1520E-02
 .2040E-01 .2393E+06-.1096E-01-1866.     -.1520E-02
 .2139E-01 .2395E+06-.1781E-01-1545.     -.1520E-02
 .2242E-01 .2391E+06-.1743E-01-1386.     -.1520E-02
 .2344E-01 .2403E+06-.8678E-02-1237.     -.1520E-02
 .2437E-01 .2394E+06-.3352E-02-725.5     -.1520E-02
 .2540E-01 .2394E+06-.9059E-02-989.1     -.1520E-02
 .2635E-01 .2398E+06 .2070      1064.     -.1520E-02
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File STABM.DAT
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2401 4 0 34  5        .6912E+06 269.8      .2107E+05 .1000
1982 267 COBRA PROBE SURVEYS 24,40;Z=3.5INS. ON FLOOR BY. M.MCK.

 .8845E-03 .7241E+05 50.00    -183.9    -.2231E-01
 .2958E-02 .6964E+05 62.16    -236.2    -.1441E-01
 .3007E-02 .6975E+05 62.17     61.97    -.1441E-01
 .3981E-02 .6802E+05 48.96    -339.2    -.1304E-01
 .4035E-02 .6854E+05 48.97     247.1    -.1304E-01
 .5032E-02 .7042E+05 35.53    -541.2    -.1179E-01
 .5090E-02 .7115E+05 35.51    -84.91    -.1179E-01
 .5131E-02 .7034E+05 34.58    -634.6    -.1179E-01
 .6139E-02 .7828E+05 23.22     404.0    -.9129E-02
 .6243E-02 .7839E+05 23.23    -4.422    -.9129E-02
 .7279E-02 .9551E+05 14.19     594.0    -.6997E-02
 .7335E-02 .9649E+05 14.14    -919.9    -.6997E-02
 .7557E-02 .9956E+05 10.48    -4329.    -.6180E-02
 .8582E-02 .1219E+06 6.738    -3662.    -.1520E-02
 .9077E-02 .1411E+06 6.272    -3524.    -.1520E-02
 .1010E-01 .1572E+06 4.837    -2930.    -.1520E-02
 .1109E-01 .1853E+06 4.816    -193.5    -.1520E-02
 .1158E-01 .1988E+06 4.419    -1872.    -.1520E-02
 .1259E-01 .2252E+06 2.937    -3983.    -.1520E-02
 .1362E-01 .2597E+06 2.938    -3307.    -.1520E-02
 .1463E-01 .2706E+06 2.928    -4137.    -.1520E-02
 .1559E-01 .3029E+06 2.574    -2348.    -.1520E-02
 .1664E-01 .3194E+06 2.330    -2306.    -.1520E-02
 .1758E-01 .3353E+06 2.415    -3627.    -.1520E-02
 .1861E-01 .3401E+06 2.905     4302.    -.1520E-02
 .1959E-01 .3433E+06 2.884     4265.    -.1520E-02
 .2060E-01 .3465E+06 2.875     3217.    -.1520E-02
 .2108E-01 .3444E+06 2.642    -2702.    -.1520E-02
 .2210E-01 .3003E+06 4.581     926.4    -.1520E-02
 .2233E-01 .2742E+06 4.655    -757.7    -.1520E-02
 .2334E-01 .2417E+06 1.673    -3659.    -.1520E-02
 .2431E-01 .2379E+06 .6833     901.8    -.1520E-02
 .2532E-01 .2383E+06 .6807     1045.    -.1520E-02
 .2628E-01 .2388E+06 .4749    -543.6    -.1520E-02

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File SRP12.DAT
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2701 4 0 48  5        .6888E+06 267.0      .2121E+05 .7000
1982 270 COBRA PROBE SURVEYS 24,40,Z=3.5INS.ON FLOOR BY M.MCK.

 .2794E-03 .9533E+05 85.72    -6728.    -.4727E-01
 .1163E-02 .9692E+05 84.72     11.99    -.4727E-01
 .1197E-02 .9688E+05 83.56    -152.0    -.4727E-01
 .2259E-02 .1090E+06 54.99     442.3    -.7433E-02
 .2301E-02 .1078E+06 55.00     511.0    -.7433E-02
 .2368E-02 .1083E+06 54.33     376.9    -.7433E-02
 .3428E-02 .1108E+06 44.30     70.25    -.6968E-02
 .3508E-02 .1103E+06 44.32     138.9    -.6968E-02
 .4015E-02 .1122E+06 39.68    -878.5    -.7092E-02
 .4116E-02 .1106E+06 39.87     427.5    -.7092E-02
 .5126E-02 .1205E+06 30.65     333.2    -.5729E-02
 .5141E-02 .1183E+06 30.64    -25.29    -.5729E-02
 .5186E-02 .1212E+06 29.61     394.2    -.5729E-02
 .5297E-02 .1252E+06 28.04     201.9    -.5729E-02
 .6266E-02 .1379E+06 20.72     395.4    -.5150E-02
 .6283E-02 .1399E+06 20.72     1156.    -.5150E-02
 .6385E-02 .1449E+06 18.20    -1969.    -.5150E-02
 .7386E-02 .1781E+06 12.92    -1945.    -.1520E-02
 .7628E-02 .1685E+06 12.80    -2393.    -.1520E-02
 .8635E-02 .2107E+06 10.21    -217.9    -.1520E-02
 .8920E-02 .2038E+06 10.29     3106.    -.1520E-02
 .9398E-02 .2297E+06 8.752     544.7    -.1520E-02
 .1042E-01 .2625E+06 7.537    -1134.    -.1520E-02
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 .1092E-01 .2769E+06 7.283    -195.9    -.1520E-02
 .1191E-01 .3006E+06 6.102    -2672.    -.1520E-02
 .1293E-01 .3275E+06 5.330    -3550.    -.1520E-02
 .1391E-01 .3426E+06 5.016    -2543.    -.1520E-02
 .1492E-01 .3431E+06 4.358    -1528.    -.1520E-02
 .1596E-01 .3460E+06 3.884     2107.    -.1520E-02
 .1693E-01 .3437E+06 3.447     1954.    -.1520E-02
 .1792E-01 .3397E+06 2.472    -3034.    -.1520E-02
 .1895E-01 .3379E+06 2.444     951.4    -.1520E-02
 .1991E-01 .3391E+06 2.453     1568.    -.1520E-02
 .2091E-01 .3388E+06 2.378     1205.    -.1520E-02
 .2190E-01 .3383E+06 2.416    -1466.    -.1520E-02
 .2239E-01 .3347E+06 2.594     1527.    -.1520E-02
 .2291E-01 .3001E+06 3.498     162.1    -.1520E-02
 .2312E-01 .2677E+06 3.227    -835.0    -.1520E-02
 .2338E-01 .2631E+06 2.668    -3715.    -.1520E-02
 .2440E-01 .2315E+06 .4370     3535.    -.1520E-02
 .2541E-01 .2315E+06 .3616     3393.    -.1520E-02
 .2641E-01 .2324E+06 .3723     3336.    -.1520E-02
 .2738E-01 .2318E+06 .3490     3866.    -.1520E-02
 .2835E-01 .2324E+06 .3540     3252.    -.1520E-02
 .2934E-01 .2320E+06 .3391     2971.    -.1520E-02
 .3041E-01 .2318E+06 .3285     2910.    -.1520E-02
 .3130E-01 .2336E+06 .3281     2800.    -.1520E-02
 .3227E-01 .2338E+06 .4564     3176.    -.1520E-02

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File SRP10.DAT
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2701 2 0 50  5        .6890E+06 269.0      .2334E+05+1.300
1982 270 COBRA PROBE SURVEYS 24,40,Z=3.5INS.ON FLOOR BY M.MCK.

 .2794E-03 .1456E+06 38.08     3165.    -.4220E-02
 .4319E-03 .1511E+06 38.40    -725.0    -.4220E-02
 .6938E-03 .1583E+06 38.73    -1183.    -.4220E-02
 .1724E-02 .1733E+06 36.41    -607.7    -.4220E-02
 .1801E-02 .1758E+06 36.39     1354.    -.4220E-02
 .2304E-02 .1794E+06 34.26     1205.    -.4220E-02
 .2404E-02 .1836E+06 34.38    -231.6    -.4220E-02
 .3416E-02 .1858E+06 27.53    -814.1    -.5557E-02
 .3655E-02 .1873E+06 27.59    -343.4    -.5557E-02
 .3752E-02 .1888E+06 27.25    -1345.    -.5557E-02
 .4799E-02 .2083E+06 21.46    -545.9    -.3692E-02
 .4878E-02 .2108E+06 21.48     1840.    -.3692E-02
 .5874E-02 .2349E+06 16.84    -89.92    -.2199E-02
 .5963E-02 .2299E+06 16.87    -1801.    -.2199E-02
 .6463E-02 .2591E+06 14.20    -2238.    -.2199E-02
 .6714E-02 .2568E+06 13.89    -2467.    -.2199E-02
 .6970E-02 .2599E+06 13.37    -1058.    -.2199E-02
 .8013E-02 .3060E+06 11.25     1256.    -.2199E-02
 .8491E-02 .3132E+06 10.94    -1000.    -.2199E-02
 .8984E-02 .3331E+06 10.14    -123.6    -.2199E-02
 .9967E-02 .3726E+06 9.066    -3030.    -.2199E-02
 .1098E-01 .4012E+06 8.698     379.7    -.2199E-02
 .1198E-01 .4183E+06 8.612     782.4    -.2199E-02
 .1296E-01 .4303E+06 8.378     3004.    -.2199E-02
 .1396E-01 .4255E+06 8.141     1440.    -.2199E-02
 .1498E-01 .4281E+06 8.065     142.5    -.2199E-02
 .1594E-01 .4263E+06 7.709    -1161.    -.2199E-02
 .1695E-01 .4161E+06 7.570    -366.5    -.2199E-02
 .1796E-01 .4044E+06 7.668    -295.4    -.2199E-02
 .1895E-01 .3812E+06 7.621    -196.1    -.2199E-02
 .1942E-01 .3666E+06 7.135     1985.    -.2199E-02
 .1965E-01 .3608E+06 6.713     814.5    -.2199E-02
 .2015E-01 .3515E+06 5.618    -2633.    -.2199E-02
 .2114E-01 .3430E+06 3.730     643.5    -.2199E-02
 .2214E-01 .3410E+06 3.287     2220.    -.2199E-02
 .2270E-01 .3364E+06 3.380    -1822.    -.2199E-02
 .2291E-01 .3357E+06 3.666    -1096.    -.2199E-02
 .2317E-01 .3181E+06 4.524    -2395.    -.2199E-02
 .2359E-01 .2678E+06 5.528    -493.7    -.2199E-02
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 .2371E-01 .2587E+06 5.368     1443.    -.2199E-02
 .2405E-01 .2414E+06 3.846     3311.    -.2199E-02
 .2495E-01 .2292E+06 .8186     1688.    -.1904E-02
 .2591E-01 .2284E+06 .8270     2158.    -.1904E-02
 .2690E-01 .2293E+06 .8217     2333.    -.1904E-02
 .2785E-01 .2291E+06 .8297     2286.    -.1904E-02
 .2882E-01 .2298E+06 .8262     2574.    -.1904E-02
 .2982E-01 .2297E+06 .8205     2136.    -.1904E-02
 .3076E-01 .2313E+06 .8281     2120.    -.1904E-02
 .3172E-01 .2302E+06 .8179     1949.    -.1904E-02
 .3266E-01 .2305E+06 .3125    -2104.    -.1904E-02

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File SRP11.DAT
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2701 3 0 49  5        .6885E+06 266.4      .2242E+05+1.500
1982 270 COBRA PROBE SURVEYS 24,40,Z=3.5INS.ON FLOOR BY M.MCK.

 .2794E-03 .1597E+06 34.58     5082.    -.3568E-02
 .1260E-02 .1835E+06 34.59    -1877.    -.3568E-02
 .1356E-02 .1874E+06 34.57    -355.2    -.3568E-02
 .1605E-02 .1903E+06 33.45     496.5    -.3568E-02
 .1848E-02 .1907E+06 32.58    -1733.    -.3568E-02
 .2349E-02 .1952E+06 30.73     1638.    -.3568E-02
 .2462E-02 .1937E+06 30.89     948.6    -.3568E-02
 .3477E-02 .2084E+06 25.10     190.2    -.2981E-02
 .3572E-02 .2093E+06 25.11     1987.    -.2981E-02
 .3678E-02 .2097E+06 25.52     2004.    -.2981E-02
 .3896E-02 .2145E+06 23.14    -2829.    -.2981E-02
 .4900E-02 .2331E+06 19.14     861.9    -.1912E-02
 .5005E-02 .2387E+06 19.10     218.3    -.1912E-02
 .5515E-02 .2504E+06 16.33    -3374.    -.1912E-02
 .5750E-02 .2581E+06 16.05     1273.    -.1912E-02
 .6284E-02 .2651E+06 14.67    -2069.    -.1912E-02
 .6531E-02 .2722E+06 14.41     2920.    -.1912E-02
 .7522E-02 .2989E+06 11.87    -1831.    -.1912E-02
 .7993E-02 .3190E+06 11.41    -416.3    -.1912E-02
 .9017E-02 .3582E+06 10.00    -2919.    -.1912E-02
 .1002E-01 .3840E+06 9.087     973.5    -.1912E-02
 .1099E-01 .4131E+06 8.655    -2276.    -.1912E-02
 .1196E-01 .4264E+06 8.278    -2849.    -.1912E-02
 .1299E-01 .4346E+06 8.129    -3477.    -.1912E-02
 .1396E-01 .4344E+06 8.337     1609.    -.1912E-02
 .1497E-01 .4341E+06 8.056    -759.1    -.1912E-02
 .1597E-01 .4309E+06 8.150     396.2    -.1912E-02
 .1697E-01 .4285E+06 7.717    -3477.    -.1912E-02
 .1793E-01 .4277E+06 7.804     177.8    -.1912E-02
 .1891E-01 .4186E+06 8.126     3354.    -.1912E-02
 .1993E-01 .3991E+06 8.449     3397.    -.1912E-02
 .2044E-01 .3867E+06 8.140    -1026.    -.1912E-02
 .2138E-01 .3511E+06 6.720    -2997.    -.1912E-02
 .2163E-01 .3475E+06 6.792     1313.    -.1912E-02
 .2214E-01 .3439E+06 5.342    -1703.    -.1912E-02
 .2315E-01 .3352E+06 4.155     3110.    -.1912E-02
 .2336E-01 .3225E+06 4.298    -1276.    -.1912E-02
 .2387E-01 .2643E+06 5.420     1485.    -.1912E-02
 .2394E-01 .2691E+06 5.291     734.6    -.1912E-02
 .2405E-01 .2414E+06 4.670    -322.7    -.1912E-02
 .2504E-01 .2253E+06-.2375    -2659.    -.1520E-02
 .2598E-01 .2265E+06-.2131    -2297.    -.1520E-02
 .2696E-01 .2261E+06-.1606    -1264.    -.1520E-02
 .2794E-01 .2262E+06-.1335    -1963.    -.1520E-02
 .2889E-01 .2270E+06-.1259    -1434.    -.1520E-02
 .2985E-01 .2270E+06-.1282    -2643.    -.1520E-02
 .3081E-01 .2268E+06-.1350    -3047.    -.1520E-02
 .3174E-01 .2276E+06-.1206    -2980.    -.1520E-02
 .3272E-01 .2279E+06-.1175     3351.    -.1520E-02
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File STA15M.DAT
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2903 1 0 46  5        .6920E+06 263.1      .2365E+05 1.800
1982 272 COBRA PROBE SURVEYS 24,40;Z=3.5INS. ON FLOOR BY M.MCK.

 .2794E-03 .1820E+06 28.24     6095.     0.000
 .1290E-02 .2179E+06 28.27     325.4    -.2670E-02
 .1521E-02 .2171E+06 28.23     896.3    -.2670E-02
 .2551E-02 .2266E+06 26.05     1990.    -.2670E-02
 .2651E-02 .2288E+06 26.08    -1141.    -.2670E-02
 .2737E-02 .2301E+06 25.44    -540.7    -.2670E-02
 .3754E-02 .2485E+06 21.28    -740.8    -.4353E-02
 .4000E-02 .2450E+06 21.22     819.2    -.4353E-02
 .4999E-02 .2664E+06 17.84     759.9    -.2033E-02
 .5089E-02 .2726E+06 17.79     1732.    -.2033E-02
 .6102E-02 .3030E+06 13.24    -4711.    -.1360E-02
 .6566E-02 .3175E+06 13.29    -4654.    -.1360E-02
 .6802E-02 .3286E+06 12.85    -1772.    -.1360E-02
 .7287E-02 .3308E+06 11.71    -4924.    -.1360E-02
 .8281E-02 .3824E+06 10.45    -1269.    -.1360E-02
 .9310E-02 .3999E+06 9.701    -4700.    -.1360E-02
 .1027E-01 .4290E+06 9.272     381.6    -.1360E-02
 .1128E-01 .4397E+06 8.658    -3560.    -.1360E-02
 .1229E-01 .4455E+06 8.606    -4412.    -.1360E-02
 .1326E-01 .4455E+06 8.578     46.08    -.1360E-02
 .1425E-01 .4455E+06 8.602    -1513.    -.1360E-02
 .1523E-01 .4453E+06 8.571    -599.9    -.1360E-02
 .1624E-01 .4455E+06 8.590    -1269.    -.1360E-02
 .1720E-01 .4453E+06 8.564    -215.9    -.1360E-02
 .1821E-01 .4454E+06 8.613    -387.9    -.1360E-02
 .1919E-01 .4447E+06 8.560     539.8    -.1360E-02
 .2016E-01 .4430E+06 8.540     1595.    -.1360E-02
 .2114E-01 .4419E+06 8.511     828.1    -.1360E-02
 .2212E-01 .4386E+06 8.523    -417.4    -.1360E-02
 .2235E-01 .4351E+06 8.371    -4687.    -.1360E-02
 .2334E-01 .4208E+06 10.52     4659.    -.1360E-02
 .2342E-01 .4184E+06 10.60     2382.    -.1360E-02
 .2378E-01 .3353E+06 15.88    -412.1    -.2852E-02
 .2387E-01 .3292E+06 15.84     1454.    -.2852E-02
 .2395E-01 .2995E+06 16.70     704.5    -.2852E-02
 .2443E-01 .2375E+06 13.76    -1885.    -.2852E-02
 .2450E-01 .2365E+06 13.69    -3813.    -.2852E-02
 .2474E-01 .2271E+06 10.63     205.8    -.1706E-02
 .2478E-01 .2279E+06 10.52     1313.    -.1706E-02
 .2503E-01 .2270E+06 7.578     1755.    -.1813E-02
 .2509E-01 .2288E+06 7.435     2693.    -.1813E-02
 .2532E-01 .2290E+06 3.452    -3109.    -.2005E-02
 .2625E-01 .2293E+06-.2456     3123.    -.1520E-02
 .2721E-01 .2296E+06-.2582     3117.    -.1520E-02
 .2818E-01 .2320E+06-.2498     3723.    -.1520E-02
 .2916E-01 .2312E+06-.2555     3169.    -.1520E-02
 .3013E-01 .2301E+06-.2540     3693.    -.1520E-02
 .3106E-01 .2296E+06-.2376     3514.    -.1520E-02

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File STA16M.DAT
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2801 5 0 45  5        .6881E+06 265.1      .1871E+05 2.100
1982 271 COBRA PROBE SURVEYS 24,40;Z=3.5INS. ON FLOOR BY. M.MCK.

 .2794E-03 .1955E+06 24.05     9826.    -.1522E-02
 .8897E-03 .2177E+06 24.04    -1828.    -.1522E-02
 .1903E-02 .2409E+06 23.15    -1836.    -.1522E-02
 .2161E-02 .2448E+06 23.10    -4358.    -.1522E-02
 .2405E-02 .2471E+06 22.41    -1795.    -.1522E-02
 .2637E-02 .2534E+06 21.76     3919.    -.1522E-02
 .3607E-02 .2690E+06 18.78    -585.5    -.1522E-02
 .3700E-02 .2676E+06 18.78    -1609.    -.1522E-02
 .4200E-02 .2783E+06 16.72     1306.    -.1522E-02
 .5226E-02 .3080E+06 14.77     2542.    -.1522E-02
 .5438E-02 .3101E+06 14.57     2526.    -.1522E-02
 .6439E-02 .3464E+06 11.94    -4307.    -.1522E-02
 .6941E-02 .3556E+06 12.11     4119.    -.1522E-02
 .7926E-02 .3896E+06 10.33    -4428.    -.1522E-02
 .8943E-02 .4105E+06 9.754    -835.3    -.1522E-02
 .9904E-02 .4365E+06 9.543     430.1    -.1522E-02
 .1091E-01 .4438E+06 9.229    -1803.    -.1522E-02
 .1189E-01 .4443E+06 9.012    -3303.    -.1522E-02
 .1288E-01 .4445E+06 9.002     50.80    -.1522E-02
 .1389E-01 .4445E+06 9.003    -889.6    -.1522E-02
 .1487E-01 .4445E+06 9.008    -1500.    -.1522E-02
 .1584E-01 .4445E+06 8.977     1180.    -.1522E-02
 .1680E-01 .4445E+06 8.771     412.0    -.1522E-02
 .1780E-01 .4445E+06 8.555    -4144.    -.1522E-02
 .1875E-01 .4445E+06 8.550    -3334.    -.1522E-02
 .1975E-01 .4444E+06 8.552    -2086.    -.1522E-02
 .2071E-01 .4441E+06 8.561    -3669.    -.1522E-02
 .2167E-01 .4424E+06 8.713    -2322.    -.1522E-02
 .2263E-01 .4304E+06 9.621     1076.    -.1522E-02
 .2356E-01 .4130E+06 10.58    -849.0    -.1522E-02
 .2451E-01 .4071E+06 10.72    -239.2    -.1522E-02
 .2550E-01 .4064E+06 11.50    -331.3    -.1522E-02
 .2645E-01 .4081E+06 16.94     1968.    -.2896E-02
 .2744E-01 .2293E+06 16.60     389.4    -.2896E-02
 .2751E-01 .2263E+06 16.58     2313.    -.2896E-02
 .2761E-01 .2269E+06 15.63     1818.    -.2896E-02
 .2772E-01 .2248E+06 14.77     1778.    -.2896E-02
 .2774E-01 .2253E+06 14.62    -319.6    -.2896E-02
 .2779E-01 .2258E+06 13.34    -3597.    -.2896E-02
 .2828E-01 .2266E+06 6.837     1700.    -.1844E-02
 .2834E-01 .2279E+06 6.720     2405.    -.1844E-02
 .2931E-01 .2306E+06-.3039     1689.    -.1520E-02
 .3025E-01 .2313E+06-.3050     1863.    -.1520E-02
 .3123E-01 .2301E+06-.3039     1767.    -.1520E-02
 .3220E-01 .2296E+06-.2913     2466.    -.1520E-02

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File STA17M.DAT
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2901 2 0 35  5        .6913E+06 269.0      .2361E+05 2.400
1982 272 COBRA PROBE SURVEYS 24,40;Z=3.5INS. ON FLOOR BY M.MCK.

 .2794E-03 .2213E+06 22.19     .1499E+05-.1453E-02
 .8064E-03 .2458E+06 22.16     885.0    -.1453E-02
 .1785E-02 .2704E+06 22.07     3817.    -.1453E-02
 .2015E-02 .2703E+06 22.07     779.6    -.1453E-02
 .3023E-02 .2849E+06 19.26    -179.2    -.1453E-02
 .3137E-02 .2916E+06 19.17    -492.5    -.1453E-02
 .3613E-02 .3030E+06 17.14    -2359.    -.1453E-02
 .4115E-02 .3137E+06 16.36    -574.1    -.1453E-02
 .4625E-02 .3196E+06 15.53    -1876.    -.1453E-02
 .4872E-02 .3244E+06 15.16     157.4    -.1453E-02
 .5874E-02 .3533E+06 12.98    -3461.    -.1453E-02
 .6352E-02 .3692E+06 12.59    -1707.    -.1453E-02
 .7318E-02 .3868E+06 10.88    -3581.    -.1453E-02
 .8295E-02 .4196E+06 10.49    -1575.    -.1453E-02
 .9296E-02 .4406E+06 10.01    -4635.    -.1453E-02
 .1031E-01 .4443E+06 9.863    -1464.    -.1453E-02
 .1128E-01 .4453E+06 9.856    -379.1    -.1453E-02
 .1229E-01 .4455E+06 9.453    -4125.    -.1453E-02
 .1329E-01 .4455E+06 9.357    -810.3    -.1453E-02
 .1425E-01 .4455E+06 9.360    -3557.    -.1453E-02
 .1521E-01 .4455E+06 9.358    -1875.    -.1453E-02
 .1619E-01 .4455E+06 9.346     1096.    -.1453E-02
 .1718E-01 .4455E+06 9.003    -3453.    -.1453E-02
 .1812E-01 .4455E+06 8.880    -4263.    -.1453E-02
 .1906E-01 .4455E+06 8.883    -4108.    -.1453E-02
 .2001E-01 .4455E+06 8.930    -1139.    -.1453E-02
 .2095E-01 .4455E+06 9.366     1395.    -.1453E-02
 .2144E-01 .4440E+06 9.456     4345.    -.1453E-02
 .2241E-01 .4316E+06 10.60     3608.    -.1453E-02
 .2339E-01 .4197E+06 11.28     1914.    -.1453E-02
 .2435E-01 .4183E+06 11.26     1619.    -.1453E-02
 .2529E-01 .4178E+06 11.00     3492.    -.1453E-02
 .2800E-01 .4178E+06 20.00    -3492.    -.1453E-02
 .3051E-01 .2235E+06 2.471    -1651.    -.8502E-02
 .3143E-01 .2244E+06-.4372E-02 3703.    -.1520E-02

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File SRP24.DAT
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2905 1 0 54  5        .6918E+06 264.1      .2253E+05 3.000
1982 272 COBRA PROBE SURVEYS 24,40;Z=3.5INS. ON FLOOR BY M.MCK.

 .2794E-03 .2131E+06 12.78     8994.     0.000
 .1306E-02 .2864E+06 17.56    -4315.    -.1228E-02
 .1543E-02 .2852E+06 17.49    -4697.    -.1228E-02
 .2567E-02 .3080E+06 15.49    -5231.    -.1228E-02
 .3058E-02 .3111E+06 15.20    -1021.    -.1228E-02
 .4056E-02 .3309E+06 13.61    -4868.    -.1228E-02
 .4562E-02 .3462E+06 13.15    -1555.    -.1228E-02
 .5088E-02 .3578E+06 12.52    -1406.    -.1228E-02
 .5584E-02 .3633E+06 11.96    -1033.    -.1228E-02
 .6537E-02 .3951E+06 10.53    -3179.    -.1228E-02
 .7519E-02 .4114E+06 10.01    -4006.    -.1228E-02
 .8563E-02 .4375E+06 9.574    -2783.    -.1228E-02
 .9567E-02 .4441E+06 9.560     553.1    -.1228E-02
 .1053E-01 .4455E+06 9.534     1040.    -.1228E-02
 .1154E-01 .4455E+06 9.000    -5376.    -.1228E-02
 .1255E-01 .4455E+06 8.759    -4960.    -.1228E-02
 .1350E-01 .4455E+06 8.765    -4182.    -.1228E-02
 .1449E-01 .4455E+06 8.757    -1601.    -.1228E-02
 .1551E-01 .4455E+06 8.749    -29.01    -.1228E-02
 .1648E-01 .4455E+06 8.739     1178.    -.1228E-02
 .1747E-01 .4455E+06 8.728     2808.    -.1228E-02
 .1848E-01 .4455E+06 8.724     2183.    -.1228E-02
 .1898E-01 .4455E+06 8.419    -3915.    -.1228E-02
 .2142E-01 .4251E+06 10.52    -3110.    -.1228E-02
 .2244E-01 .4215E+06 10.50    -2949.    -.1228E-02
 .2339E-01 .4179E+06 10.50    -4205.    -.1228E-02
 .2440E-01 .4159E+06 10.43    -3060.    -.1228E-02
 .2537E-01 .4170E+06 10.48    -1593.    -.1228E-02
 .2634E-01 .4147E+06 10.49     192.6    -.1228E-02
 .2732E-01 .4143E+06 10.49     171.6    -.1228E-02
 .2828E-01 .4125E+06 10.47     587.9    -.1228E-02
 .2925E-01 .4123E+06 10.40     1764.    -.1228E-02
 .3023E-01 .4104E+06 10.27     940.7    -.1228E-02
 .3117E-01 .4100E+06 9.930    -662.9    -.1228E-02
 .3122E-01 .4098E+06 9.904    -1641.    -.1228E-02
 .3219E-01 .3654E+06 20.00     1481.    -.1695E-02
 .3226E-01 .3338E+06 19.97    -539.1    -.1695E-02
 .3322E-01 .2181E+06 12.12     3061.    -.1989E-02
 .3326E-01 .2181E+06 12.09     2777.    -.1989E-02
 .3330E-01 .2164E+06 11.45     2899.    -.1989E-02
 .3335E-01 .2164E+06 10.50    -2891.    -.1989E-02
 .3340E-01 .2167E+06 9.982    -2268.    -.1989E-02
 .3349E-01 .2152E+06 8.852    -550.6    -.1989E-02
 .3448E-01 .2200E+06-.8889    -209.8    -.1520E-02
 .3545E-01 .2188E+06-.8954     606.4    -.1520E-02
 .3641E-01 .2205E+06-.8775     1166.    -.1520E-02
 .3738E-01 .2204E+06-.8878     948.8    -.1520E-02
 .3834E-01 .2210E+06-.8992     816.4    -.1520E-02
 .3927E-01 .2211E+06-.8297     1510.    -.1520E-02
 .4023E-01 .2211E+06-.4322     4039.    -.1520E-02
 .4121E-01 .2199E+06-.4193     3788.    -.1520E-02
 .4217E-01 .2216E+06-.4432     3320.    -.1520E-02
 .4317E-01 .2195E+06-.4660     2468.    -.1520E-02
 .4411E-01 .2198E+06-.2616     4142.    -.1520E-02

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NASA
National Aeronautics and Space Administration

Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
NASA CR-177577		

4. Title and Subtitle	5. Report Date
Hypersonic Shock/Boundary-Layer Interaction Database	April 1991
	6. Performing Organization Code
7. Author(s)	8. Performing Organization Report No.
Gary S. Settles and Lori J. Dodson	PSU-ME-90/91-003
	10. Work Unit No.
	505-59-40
9. Performing Organization Name and Address	11. Contract or Grant No.
Department of Mechanical Engineering Pennsylvania State University University Park, PA 16802	NAG2-565
	13. Type of Report and Period Covered
12. Sponsoring Agency Name and Address	Contractor Report
Ames Research Center Moffett Field, CA 94035-1000	14. Sponsoring Agency Code

15. Supplementary Notes

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16. Abstract

The present database collection and assessment effort with respect to shock/boundary layer interactions include both supersonic (M 3 and above) and hypersonic data, both two-dimensional (2-D) and three-dimensional (3-D) data, and both unseparated and separated turbulent boundary layer cases (though the emphasis is on the latter). Consideration also includes not only perfect-gas behavior, but real gases and (where appropriate) chemically-reacting flows as well. It is recognized, however, that very little data of the latter two types exist within the chosen subject area.

17. Key Words (Suggested by Author(s))	18. Distribution Statement
Hypersonic Shock-wave Turbulent boundary layer Shock-wave/boundary-layer interaction	Unclassified-Unlimited Subject Category – 34

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	158	A08

NASA FORM 1626 OCT 86